Debt has become an essential part of families’ daily lives in many countries. This dissertation examines under what circumstances credit markets replace the role of welfare states to address social risks and promote social mobility in advanced democracies. It sheds light on the socio-economic and political consequences of growing debt levels. I offer a theory that explains variation in household debt across and within countries by demonstrating that credit fills gaps between households’ financial needs and demand for social services on the one hand and welfare states’ supply of social services on the other—a gap I refer to as social policy shortfall. The transformation of stable Fordist economies into flexible knowledge economies led to increasingly fragmented employment patterns and life-course trajectories. Welfare states, however, have often not kept up with these disruptions and leave households with larger financial burdens. Households increasingly go into debt to address the financial consequences of social risk such as unemployment or sickness as well as to seize social opportunity by investing in childcare and family, education, and housing. Cross-nationally, two factors explain the variation in household debt: the size and type of social policy shortfall determine individuals’ financial needs. But whether credit emerges as a private alternative to welfare states is contingent upon the structure of a country’s credit regime, which shapes how easily individuals can borrow money. Drawing on full-population administrative records from Denmark and micro-level panel data from the U.S. and Germany, I show that the permissive credit regimes of the U.S. and Denmark grant households easy access to credit, but the distribution of debt across households differs because welfare states in both countries protect and support households differently. In Germany, the restrictive credit regime results in less borrowing even in light of social policy reforms. The findings have implications for how scholars and policymakers think about the role of financial markets and household debt in a world of changing labor markets and welfare states. It shows how credit markets and welfare states appear to fulfill similar functions but follow different underlying logics, each with its own socio-economic and distributional consequences that shape and amplify insecurity and inequality.

Thesis Supervisor: Kathleen Thelen
Title: Ford Professor of Political Science
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Introduction

Many families these days are no strangers to debt. Perhaps nothing represents the current status of debt more visibly than credit cards. What began as a symbol of economic prestige and power now affords their holder access to travel rewards, hotel points, concierge services, and even insurance products. For some, affluence, opportunities, and upward mobility appear to be just a swipe and a signature away. For others, these simple pieces of plastic have turned into financial lifelines as credit has become more pervasive and accessible.

But the bonds of debt run much deeper in our societies.¹ From mortgage payments and home equity loans to student loans, personal loans, and credit card bills, households devote a large share of their incomes to service various forms of debt. Across the OECD, household debt as a share of disposable income has grown from an average of 78% in 1995 to 134% in 2015. In Denmark and the Netherlands, debt levels stood at 293 and 276 percent of household income in 2015, respectively, the highest in the OECD, followed by Iceland and Norway with over 230 percent.² Nearly a decade after the credit bubble burst in 2008, American households have borrowed more money than ever before. Total household debt reached an all-time high of $13.15 trillion at the end of 2017.³ Soaring debt levels can push households into significant financial troubles, leading to insolvency and bankruptcy (Porter 2012), and negatively affect health outcomes (Turunen and Hiilamo 2014) and even employment prospects (Bos, Breza and Liberman 2016). Households in other countries, however, stayed away from the borrowing binge. Most notably, debt-to-income ratios in Germany and Japan have remained stable and even fell slightly since the 2000s.

Explanations for rising household debt range from borrowing as a response to income inequality and stagnating wage (Kumhof, Rancière and Winant 2015; Rajan 2010; Sullivan 2008) to borrowing as a form of luxury consumption (Frank 2010), to borrowing as part of a “new finance culture” that made credit more acceptable and households more willing

¹For a long history of debt see Graeber (2011).
²See OECD National Accounts Statistics.
³See the New York Federal Reserve’s Quarterly Report on Household Debt and Credit.
to use it (Davis 2009; Fligstein and Goldstein 2015). These accounts have advanced our understanding of the role of credit and debt in our societies but often focus on single-country case studies and thus cannot explain cross-national variation in household debt. Denmark and the Netherlands, for example, have higher levels of household debt than the U.S. and the U.K. despite lower levels of income inequality. Germany experienced wage stagnation and even declines in the 2000s but debt levels remained flat.

In this dissertation, I offer a different perspective. I argue that increasingly individuals and their families go into debt to pay for basic social services and to cover income losses that in many cases used to be provided for or addressed by traditional welfare programs. In other words, credit can mitigate the consequences of social risks and help households to seize social mobility and opportunity, thus fulfilling functions similar to welfare states. At first, it might seem unconventional to think of credit as fulfilling social policy functions, not least since the welfare state is often conceived of as a response to market disruptions, for example to buffer the financial impact of job loss. But credit markets share functional similarities with welfare regimes, understood as the bundle of policies and institutions that provide social services and insurance for individuals (Esping-Andersen 1999). Welfare states provide three main functions: they distribute resources across individuals, typically from higher incomes to lower incomes. They provide insurance against risk, for example unemployment insurance. And they facilitate social opportunity through education or child care programs. Now consider credit markets, which I define as markets for loan products including mortgages, student loans, personal loans, and credit cards. By allowing individuals to borrow money, they can fulfill functions that are at least on the surface similar to that of welfare states: credit markets also distribute resources, although not across individuals but across time from individuals’ future selves to the present. Credit markets provide financial liquidity and allow households to borrow money to address financial gaps. And credit markets enable investment in financial assets such as housing and personal assets such as education or child care.

During the last decades, credit markets have grown in importance (Barba and Pivetti 2009; Zinman 2015). But what is less well understood is how credit markets interact with social policies. In this dissertation, I study the links between credit markets and social policies and shed light on three big questions: First, how do changes in labor markets, life-course trajectories, and social policies influence households' financial situations? Second, under what circumstances do credit markets replace the role of welfare states to address

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4 For an important exception see Ahlquist and Ansell (2017).
social risks and promote social opportunities? And third, what are the socio-economic and political consequences of growing levels of household debt?

Current research rarely conceptualizes credit as a functional part of the welfare state. The dominant approaches to the comparative study of welfare states (Esping-Andersen 1990, 1999) and varieties of capitalism (Hall and Soskice 2001) remain silent on financial markets and household debt. In contrast, work on the financialization of the economy (Krippner 2011; van der Zwan 2014) has focused mostly on the deregulation of financial markets and the subsequent growth of the financial sector. A small but growing literature, however, sits between both worlds, arguing that there is a “trade-off” between credit and welfare states (Prasad 2012). The most prominent accounts covering this trade-off have focused on the relationship between homeownership (and mortgage debt) and pensions. The broad argument suggests that countries with high homeownership rates and larger mortgage markets operate smaller welfare states because owners perceive their home as a form of self-insurance. This, in turn, reduces the need for financial support, for example pensions, during old age. For these reasons it also makes homeowners less likely to support fiscal redistribution when the asset price of their home appreciates.5

Others have focused on single-country cases studies, mostly in the U.S., and highlighted the “safety-net” function of credit (Montgomerie 2013). These accounts paint the contours of the relationship between social policies and households’ borrowing behavior but leave significant variation in this relationship across as well as within countries unexplained. Even more consequential, research on the “trade-off” between credit and welfare states obscures gaps between different types of households’ financial needs and expenditures and corresponding social policies. In other words, macro-level data cannot shed light on the circumstances under which households in different countries borrow money to compensate for gaps between their financial needs and welfare states’ financial support.

This dissertation bridges these different strands of research. It explains variation in household debt across and within countries by studying the circumstances under which credit markets replace the role of welfare states to address social risks and promote social opportunity in advanced democracies.

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5 See Ansell (2014); Conley and Gifford (2006); Kemeny (2001); McCarty, Poole and Rosenthal (2013); Schwartz and Seabrooke (2008).
The main argument of this dissertation and developed in greater detail in Chapter 1 is that credit markets can fill the gap between households' financial needs and welfare states' financial support—a gap I refer to as social policy shortfall. Specifically, I argue that households borrow money to pay for basic social services and to cover income losses when traditional welfare programs are or have become incomplete. The size and type of social policy shortfall is one of two factors that help explain variation in household debt across countries and within countries. But whether the social policy shortfall translates into compensatory borrowing depends on a second factor, a country's credit regime, which captures the institutional bonds between banks, businesses, and households, the policy environment, and political coalitions that make households' access to credit more or less permissive.

The first factor, the social policy shortfall, is the result of fundamental changes in labor markets, households' life-course trajectories, and welfare states. The transition of stable Fordist economies into flexible knowledge economies has brought more disruptions in individuals' employment patterns. Unemployment, once thought of as a cyclical response to business cycles, has become a persistent, long-term, and structural problem. The workplace has become increasingly “fissured” (Weil 2014) and, relatedly, non-standard work, including temporary work, independent contractors, and part-time employment, as well as shorter and fluctuating work hours, have become the new reality for many workers. These trends reduced employment stability, made labor markets more volatile and selective, and transitions into and out of employment more frequent and protracted (Schmid 2002). But fragmentation and disruption also affected individuals' life-course trajectories, a term that describes individuals' movements through various stages of life, from raising children, education and training, employment, and retirement and care for elderly (Brückner and Mayer 2005; Mayer 2009). Life-course trajectories have been affected by the growing share of women entering the labor market and the subsequent decline of the single, often male, breadwinner model. Another driver of fragmentation are more frequent shifts in and out of employment, for example taking time off from work to care for children or elderly and frail relatives, getting more education and further training, or moving from one job to another.

Both trends, the fragmentation of employment patterns and life-course trajectories, have considerable financial impacts on individuals and their families. Some lose part of their income because they became unemployed or because they take time off work to care for young children. Others face higher expenditures because of childcare costs. In sum, households not
only experience income losses due to unemployment or sickness but also due to voluntary decisions such as taking time off work for education or to raise a family.

In most OECD countries, households do not shoulder the full financial impact of disrupted and fragmented employment patterns and life-course trajectories themselves. Welfare states are designed to provide insurance and other forms of financial support. But as Fordist economies turned into knowledge economies, welfare states often have not kept up with disruptions that come along. In some cases, policy retrenchment cut benefits, tightened eligibility criteria, or excluded various types of risks from coverage. In other cases, policymakers have failed to adapt existing policies to changing socio-economic realities and let policies drift (Bonoli and Natali 2012; Hacker 2002; Pierson 2001; Streeck and Thelen 2005).

Cross-nationally, however, there is considerable variation in the degree of financial needs caused by fragmented employment patterns and life-course trajectories as well as in the degree of financial support provided by the welfare state. Chapter 2 shows that in some countries, labor market regulation and employment protection are weak, facilitating swift labor turnover, whereas in others they are stronger, resulting in insider-outsider dynamics between a core of protected core workers and an exposed periphery of marginally-employed individuals (Rueda 2007). Differences extend into the worlds of welfare states too: the Nordic states offer comprehensive and generous support for individuals ranging from social insurance programs for unemployment or sickness to social investment policies covering paid parental leave and subsidized childcare spots. In other countries such as the U.S. or U.K., welfare states are less comprehensive and generous, have more stringent eligibility criteria or provide no protection and support at all. The lack of a federal paid maternity leave program in the U.S. is a case in point.

Social policy shortfalls can therefore arise in two domains. They can result from social risks as in the case of disruptions of employment patterns, for example due to unemployment or sickness. But they can also result from social opportunity in the case of fragmented life-course trajectories, for example triggered by taking to time off work for education or to raise a family. The different functions of credit mirror both domains. In the first case, borrowing is more about consumption or income smoothing and allows individuals to “move onward.” Credit functions as a form of social insurance. In the second case, borrowing is more about investment in assets, both personal and financial, and supports individuals to “move upward.” Credit thus operates as a form of social investment.

The second factor, the credit regime, then determines how easily individuals can tap into
credit markets and borrow money to address this social policy shortfall. Credit regimes, as I show in Chapter 3, are the interaction of institutional bonds between banks, households, and firms, the regulatory and fiscal policy environment, and the political coalitions that sustain them. Credit regimes are permissive when institutional bonds exist between banks and households and when regulatory and fiscal policies allow a broader range of financial products and incentivize households to borrow rather than to save. This is the case of Denmark and the U.S.

By contrast, restrictive credit regimes such as Germany’s are characterized by strong institutional bonds between banks and the business sector and a regulatory and fiscal policy environment that channels credit away from households. I consider the type of credit regime as exogenous and orthogonal to political choices about social and labor market policies. The rise of credit as a private alternative to the welfare state and the cross-national variation in this relationship is the unintended consequence of path-dependent decisions about the structure of financial and credit markets (see also Krippner 2011). In sum, whether households borrow to address social policy shortfalls is contingent on the permissiveness of their country’s credit regime.

**Why We Should Study the Links Between Credit and Social Policy**

Credit and debt can be a boon as much as a burden. For some people, credit can enhance their social and economic opportunities by allowing them to access education and housing or by helping them pay for the costs of raising a family. But not everyone can reap these benefits because access to credit and wealth holdings are distributed more and more unequally. For others, credit is less of an opportunity and more of a burden. Access to credit can ease financial gaps in the short run, but the resulting debt burden can amplify economic insecurity. When debt repayments take up a larger share of households’ income, arrears and bankruptcy become more likely.

This dissertation highlights a fundamental transformation in the ways individuals and their families manage their own risks and social opportunities by tapping into credit markets. Fordist economies were typically characterized by stable career paths, government- or firm-based social safety nets, and single, often male breadwinner households. But as Chapter 2 shows, the transformation into knowledge economies has broken up the stability of traditional employment and family structures. Jacob Hacker (2008) has put the spotlight on what he calls the “Great Risk Shift,” documenting how in the U.S. the combination of retrenchment
of government- or firm-based social safety nets as well as policy drift have shifted social risks from the shoulders of society onto the shoulders of individuals themselves.

In this dissertation, I show that this shift is much broader and extends from social risks all the way to social opportunity. Similarly, borrowing is not only a response to welfare state retrenchment. It also compensates for the growing financial burden of interrupted employment trajectories, educational choices, and childrearing. Yet the magnitude of these shifts and whether households go into debt to manage social risks and social opportunity varies cross-nationally and points to important political and institutional levers that help us understand the link between social policy shortfalls and households' indebtedness.

Credit markets and welfare states, even if both appear to fulfill similar functions, follow very different logics: access to financial support through social policies is based on entitlements and guaranteed social rights, whereas in the case of credit it is based on the promise and expectation of repayment. Credit is also not a form of insurance because debtors will pay more than the amount they initially borrowed (principal plus interest). Instead, credit is an inter-temporal financial obligation that transfers resources through the financial system from the borrower’s future self into the present. While the welfare state is built on social rights, credit is not. A system that grants financial support based on promises and expectations to repay—as in the case of credit—instead of entitlements and guaranteed claims—as in the case of social policies—favors some households over others and has significant downstream consequences for social stratification, solidarity, and public support for the welfare state.

As I demonstrate in Chapter 6, households with easy access to credit tend to feel more economically secure than those who have a harder time borrowing money. This, in turn, makes them less likely to support the welfare state because they perceive credit as a private alternative to social insurance and more likely to support pro-credit policies such as tax deductibility of interest payments. The use of credit as such a private alternative comes with its own reinforcing logic and leads to powerful feedback effects. First, there is a material rivalry between debt and interest payments on the one hand and tax payments on the other. Borrowing money adds an additional financial burden onto the shoulders of households, making them less likely to support tax-financed social policies. Second, borrowing money to “invest” in housing, education, or childcare, makes individuals less likely to support the public provision of these services because they want to reap the benefits of their private investment and thus chose to “opt out” of publicly-provided social services. This has a reinforcing logic: easily available credit allows individuals to fill the shortfall between demand and supply of social services by opting for private solutions and allowing private markets to
function much better. This creates vested interests in pro-credit policies and undermines the public provision of goods. Once economically-secure households perceive credit as a private alternative to social policies, they may no longer be willing to support public policies that tend to benefit economically-insecure households.

This credit-based form of social policy distributes economic risks and social opportunities differently across households since not everyone has equal access to credit markets. Lower-income households pay higher interest rates than higher-income ones and often spend a larger share of their incomes on debt repayment. Borrowing money to privately finance social opportunities to raise a family or for educational purposes comes with high opportunity costs and effectively limits these choices to a smaller segment of society. This dissertation highlights the bifurcated nature of credit and its political and economic consequences.

Research Strategy

Relatively few studies devote their attention to the links between household debt and social policies and they vary across countries. Comparative work has focused largely on national-level aggregate data that masks important variation in the types of debt and social policy shortfalls that individual households experience. Moreover, broad measures of debt can be misleading because they do not tell us which groups in society are the ones holding specific types of debt. Macro-level data cannot shed light on the circumstances under which households in different countries borrow money to compensate for gaps between their financial needs and welfare states’ financial support. Single-country case studies can address these problems through micro-level data but only do so at the expense of the comparative framework. But if we want to understand why some countries have much higher levels of household debt than others despite similarities in labor markets or welfare regimes, we need to adopt a comparative micro-level perspective. We should therefore focus on the level at which borrowing choices are made and turn to micro-level panel data to study how debt patterns vary across households in response to social policy shortfalls.

In this dissertation, I bring both worlds together and leverage comparative macro-level data for OECD countries as well as detailed comparative micro-level data from three country-cases to shed light on the extent to which different types of households in different countries borrow money to address financial gaps and social policy shortfalls. The primary empirical focus is the advanced economies of the OECD world, where welfare states and financial markets are most developed. In most cases, the data allows me to take a longer time-horizon, often starting in the 1980s all the way up to the present. The choice of these three
countries is motivated by the empirical implications of my theory. The cases vary not only in the structure of their labor markets and welfare regimes (see Esping-Andersen 1999), but also in the structure of their credit regimes and display considerable variation in debt levels. This allows for meaningful paired comparisons of these cases, holding constant the structure of the credit regime or comparing similar impacts of social policy reforms.

Denmark and the U.S. both share flexible labor markets and permissive credit regimes that easily channel credit to households. Yet the social policy regimes in both countries differ significantly. The residual American welfare state exposes a larger segment of society to considerable financial shortfalls and economic risks compared to the more comprehensive Danish welfare state. In both countries, households that experience a larger shortfall borrow money to address the resulting financial gap, but—more consequential—these households fall in different parts of the income distribution and borrow money for different types of social policy shortfalls. Germany provides an important comparative case. Its labor market is segmented into a protected core with stable employment and an exposed periphery with precarious and unstable employment, while its restrictive credit regime makes it harder for households to borrow money.

In Chapters 4 and 5, I track households over time and compare to what extent households in these three countries borrow money as they experience similar types of social policy shortfalls. This allows me to study borrowing behavior in different credit and welfare regimes. For Denmark, I use administrative records that cover the entire population since the late-1980s. For the German and U.S. cases, I draw on several panel datasets that contain information on labor market status as well as income, assets, and liabilities. Specifically, I use the Survey of Income and Program Participations, the Survey of Consumer Finances, and the Panel Survey of Income Dynamics for the U.S. case as well as the SAVE Panel Study and the German Socio-Economic Panel Study for the German case.7

One challenge that has hindered research on the socio-economic and especially political consequences of household debt is a lack of data. Most datasets contain either standard batteries of socio-economic and political variables or detailed information on assets and liabilities but rarely combine both, which has made it extremely difficult to study the political and economic consequences of the links between household debt and social policies across countries. In Chapter 6, I draw on an original cross-national survey in which colleagues and I collected data from over 20,000 households in nine OECD countries on their socio-

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6 Access to the Danish full-population administrative records was approved by the Danish Data Authority and granted by Statistics Denmark.
7 I describe these data sources in greater detail in section A.1 in the data appendix.
economic background, income, and wealth as well as measures of economic security and financial well-being, public opinion, and political behavior.\footnote{The survey was designed together with Jacob Gerner Hariri, Amalie Sophie Jensen, and David Dreyer Lassen, implemented by Epinion, and generously funded by David Dreyer Lassen's European Research Council Grant No. 313673.}

The empirical chapters of this dissertation seek to balance internal and external validity by identifying causal relationships and demonstrating broader applicability beyond a single case study. I draw on sharp discontinuities in policy akin to natural experiments that provide causal identification, such as the introduction of home equity loans in Denmark in 1992 and the Hartz labor market reforms in the 2000s to study which types of households borrow more once access to credit has improved and whether households borrow in response to increases in social policy shortfalls. Other analyses rely on subnational variation in social policies, such as different levels of generosity of unemployment insurance benefits across U.S. states and over time, demonstrating that individuals struck by unemployment borrow more in states that have less generous unemployment insurance benefits. Moreover, the panel structure of my datasets allows me to study whether households in Denmark, Germany, and the U.S. borrow money to address the financial impact of disrupted employment patterns and fragmented life-course trajectories.

**Contributions**

This dissertation makes three main contributions. First, it helps explain variation in debt levels both across and within countries by offering a comparative theoretical framework that integrates credit markets and social policies in the study of comparative political economy. It shows that the restrictive nature of Germany's credit regime explains why debt levels are much lower for German households than for Danish or American households who live in more permissive credit regimes. But it is the interaction of the type of credit regime with the size and type of social policy shortfalls that explains which households borrow money. I show that lower-income Danish households receive more financial support in the case of exogenous income losses from their welfare state than lower-income American households, resulting in a larger mismatch and more borrowing among the latter. But it is higher-income households in both Denmark and the U.S. that draw on credit markets to cover the financial burden of deliberate life course choices related to taking time off work, education, or child-rearing.

The German case adds an important comparison to Denmark and the U.S. Its labor market centers around a protected core of workers with long-term, stable employment, but since the 2000s has seen the rise of an exposed periphery of workers with non-standard
and marginal forms of employment. The German financial regime, however, restricts access to credit to households. As a result, households rarely borrow money to compensate for financial shortfalls because they cannot tap into credit markets.

This dissertation also draws attention to political choices that significantly influence households’ borrowing behavior. In the U.S. case, I use an original dataset on the generosity of state-level unemployment insurance benefits and a difference-in-difference design to show that households struck by unemployment borrow more in states with less generous benefits. In the Danish case, I draw on a natural experiment, leveraging the unexpected introduction of home equity loans in 1992, to demonstrate that households that previously had little savings to weather income losses began to draw heavily on these loans to cover financial shortfalls. The permissive financial regimes of both countries make credit easily available to households and enable households to borrow to compensate for the social policy shortfall. By contrast, I show that the German labor market reforms in 2005, which sharply cut long-term unemployment benefits and thus increased the social policy shortfall, were not met with compensatory borrowing by affected households but instead led to a decline in household debt.

Second, this dissertation builds on work in political economy that has documented the impact of welfare state reform on economic insecurity as well as on work that studies the socio-economic impact of financialization. I argue that credit can substitute for the social insurance dimension of the welfare state as much as for its focus on social opportunity. It can be an instrument of the unemployed to help them address financial losses. It can also allow households to invest in housing, daycare, or education. As credit has become an instrument to address social risks and seize social opportunity, it benefits some as much as it increases risks and amplifies economic insecurity among others. This bifurcated nature of credit and its links to social policies are at the center of this dissertation. This project helps us understand under what circumstances debt translates into economic insecurity and how it influences public opinion and support for the welfare state. Perhaps more importantly, this dissertation also shows that politics and policies play a key but under-appreciated role in explaining variation in levels of household debt across and within countries. Whether households borrow money in response to growing social policy shortfalls is contingent upon the structure of credit regimes.

In other words, this dissertation advocates for incorporating the influence of financial markets in general and credit markets in particular on households more firmly in the study of comparative political economy and social policy. It shows that growing levels of household
debt are a response to social policy reforms, welfare state retrenchment, and policy drift and that access to credit and indebtedness in turn play an important role in shaping preferences toward social policies. This dissertation thus contributes to the study of social policies and feedback loops by incorporating credit and debt as another factor shaping welfare states. It also contributes to research on financialization by uncovering links between the structures of credit and welfare regimes.

Lastly, this dissertation assembles a broad array of macro- and micro-level data to test the implication of my social policy theory of everyday borrowing. The argument that households borrow to address gaps between their financial needs and welfare states’ financial support as a function of the size and type of the social policy shortfall and the type of credit regime requires a combination of micro-level data in different national contexts. Unlike prior work that has focused either on cross-sectional, aggregate data or single-country case studies, I study households’ borrowing choices in light of different types of social policy shortfalls in Denmark, Germany, and the U.S.—countries that represent different labor market, welfare, and credit regimes. The combination of paired micro-level case studies allows me to compare how macro-level institutional structures such as welfare and credit regime shape the financial impact of unemployment or childcare and the extent to which households borrow money to address these financial consequences. Methodologically, this dissertation makes a contribution in leveraging innovative research designs such as natural experiments in Denmark and Germany, subnational variation across U.S. states in unemployment insurance generosity, and event studies that draw on panel survey data and full-population administrative data to identify causal relationships.

Outline

The remainder of this dissertation unfolds as follows. Chapter 1 lays out a social policy theory of everyday borrowing, explaining variation in household debt across and within countries as a function of the permissiveness of credit regimes and the size and type of social policy shortfalls. Chapter 2 addresses the fundamental transition from Fordist economies to knowledge economies has influenced labor markets, family structures, and welfare states. Focusing on Denmark, Germany, and the U.S., this chapter shows the extent to which employment patterns and households’ life-course trajectories became disrupted and fragmented and have resulted in social policy shortfalls. To quantify the size of the social policy shortfall, this chapter develops a macro-level measure based on the volatility of households’ incomes before and after taxes and transfers across the three cases. Chapter 3 introduces the structure
of credit regimes in Denmark, the U.S., and Germany as a crucial macro-level factor that determines how easily households can borrow money. The permissiveness of credit regimes is a function of institutional bonds between banks, business, and households, the regulatory and fiscal policy environment, and political coalitions that sustain both institutions and policies. Chapters 4 and 5 are the main empirical chapters that substantiate the social policy theory of everyday borrowing based the three country cases. Chapter 4 studies the financial impact of disrupted employment patterns such as unemployment or shorter work hours and shows under what circumstances credit can serve as social insurance. Chapter 5 then turns to credit as a form of social investment and documents when households go into debt to meet the financial consequences of fragmented life-course trajectories such as taking time off work to raise a family or get more education and training. Both chapters utilize micro-level data and leverage natural experiments, subnational variation of policy rules, and the panel structure of the datasets. Finally, Chapter 6 focuses on the socio-economic and political consequences of borrowing money to bridge financial shortfalls and, specifically, of using credit as a substitute for publicly-provided policies.
Chapter 1
A Social Policy Theory of Everyday Borrowing

"Life Takes Visa" was the slogan of America's largest credit card issuer up until 2009, when the Great Recession had already begun to affect the economic and financial lives of millions of people in the United States and elsewhere. The notion that one cannot live without some form of credit, including mortgages, personal and educational loans, or credit cards, is more than just an advertising slogan. Borrowing money has become an essential part of many families' daily lives, reflected in the tremendous growth of household debt over the last decades in Anglo-Saxon economies such as the U.S. and the U.K., but also in European countries such as the Netherlands or Denmark. Yet in other countries, most notably Germany and Japan, household debt as a share of income has remained stagnant.

The growing indebtedness of households has triggered academic interest in the topic, but scholars have paid little attention to the interaction between credit markets and social policy. Perhaps more importantly, we lack a comprehensive theory that explains variation in debt levels across and within countries. Research on income and wealth inequality focuses on the redistribution of public resources from the ones who have to the ones who have not, but neglects the fact that credit markets increasingly replace the role of welfare states to address social risks and promote social mobility. To give an example, credit allows households to smooth income losses or finance higher expenditures in light of fluctuating incomes and fading financial support from the welfare state. Disruptions in employment patterns such as unemployment or sickness have always been a significant source of income volatility and financial distress. But deliberate life-course choices about taking time off work, educational, or childcare options increasingly add additional financial burdens because expenses are rising.

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10 Credit and debt are two sides of the same coin. Credit captures the ability to borrow money and, therefore, take on debt. Credit describes a flow of resources, whereas debt is the result of borrowing and describes the stock, or the amount, of money that is owed.
11 Notable exceptions include Ahlquist and Ansell (2017); Ansell (2012); Thurston (2018); Trumbull (2014).
governments are scaling back their support, or both. These developments have societal and distributional consequences when financial costs become prohibitively high and put these life-course choices out of reach from some households. Rising credit card debt among the unemployed and the growing burden of student loans among recent graduates are examples where declining public support for social policy programs or public education influence the amount of debt households carry. Even the soaring costs of childcare can push families to go into debt. In the U.K., proposals of a “National Childcare Contribution Scheme” have been debated, under which parents would be able to borrow up to £10,000 from the government to offset the costs of childcare. Meanwhile, NGOs report that nearly half of single parents already have to borrow money to stem the financial burden of childcare. In New York City, the city council offers subsidized loans in partnership with a credit union through the “Middle Class Child Care Loan Program” to eligible families with an annual income of $80,000 to $200,000 to help pay for childcare. This credit-financed approach to childcare in both Anglo-Saxon countries is in stark contrast to the public provision of heavily subsidized childcare in other countries like the Nordics.

The move of credit markets into the space of welfare states opens up a range of questions. Under what circumstances are credit markets replacing the role of welfare states to address social risks and promote social mobility? And what explains the variation in household debt across and within countries? The dominant political economy frameworks such as “Varieties of Capitalism” (Hall and Soskice 2001) or “Welfare Regime Typologies” (Esping-Andersen 1990, 1999) remain largely silent on the effects of changing social policies and rising financial gaps on household debt, nor do empirical patterns of debt levels across countries match the theories’ conceptual country-clusters as I will show in section 1.2 below. Other work suggests that rising levels of household debt are the response to income inequality or stagnating wages (see, for example, Kumhof, Rancière and Winant 2015; Rajan 2010; Sullivan 2008) or reflect luxury and conspicuous consumption to “keep up with the Joneses” (see, for example, Frank 2010). These accounts emphasize important income-smoothing motivations for borrowing but fail to explain significant cross-national variation in household debt.

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12 I use the term life-course to capture different stages in people’s lives that are related to child-rearing and family, education and training, or various forms of leave from work (see Mayer 2009).


14 The Varieties of Capitalism literature devotes a significant part of their work to the study of corporate governance schemes and its links to industrial relations but rarely considers financial markets and their functions for private households.

15 For a diverging view on the relationship between income inequality and debt see Coibion et al. (2014).
debt. Countries like Denmark and the Netherlands have lower levels of income inequality but similar or even higher levels of debt compared to the U.S. or the U.K. In Germany, real wages were stagnant for much of the 1990s and declined in the early 2000s, yet household debt levels did not increase in response to wage stagnation (DIW 2009). Still others have argued that changes in behavioral and cultural norms are driving borrowing choices, suggesting that a "new finance culture" made credit more acceptable and households more willing to use it for a broader range of purposes (Davis 2009; Fligstein and Goldstein 2015). These arguments, however, obscure the influence of households' demand for credit and their ability to access credit in the first place, and therefore miss important variation across countries.

*Credit to Address Financial Gaps and Social Policy Shortfalls*

In this dissertation, I develop a general theory that explains variation in household debt across countries and across households by demonstrating that credit fills gaps between households’ financial needs and demand for social services on the one hand and welfare states’ supply of social services on the other. These gaps are the result of the fundamental transformation from a Fordist economy to a flexible knowledge economy that disrupts employment patterns and life-course trajectories and leads to two different types of financial burdens. First, households have to deal with the financial consequences of unexpected income losses that are caused by social risks such as unemployment or precarious forms of employment. Second, households also face the financial impact of what I call “discretionary” income losses and higher expenses in order to seize social opportunities related to education and retraining, leave of absence from work for maternity or paternity leave, or childcare programs that allow families to combine work and family life. Social policies, however, have often not kept up with shifts in employment patterns and life-course trajectories and leave significant gaps between households’ financial needs and the welfare state’s financial support—a situation I refer to as a social policy shortfall. The key argument, in brief, is that households that experience larger social policy shortfalls go into debt to bridge these financial gaps, but the borrowing response to social policy shortfalls is contingent on a country’s credit regime, which determines how easily households can access credit.

I build on a small but insightful body of work that suggests that credit, driven by liberalized financial markets in some cases and facilitated by generous bankruptcy rules in others,
increasingly substitutes for residual welfare states. These lay out rough contours of the relationship between social policies and households’ borrowing behavior but leave significant variation in this relationship across as well as within countries unexplained.

My core argument, advanced in greater detail below, is that two central factors shape the variation in household debt across countries and across households: first, the source of income loss and the resulting size of the social policy shortfall, and second, the structure of the credit regime, which shapes how easily individuals can access credit markets and borrow money. The first factor—the social policy shortfall—operates at the micro-level and captures the size of the gap between households’ financial needs and demand for social services and welfare states’ financial support and supply of social services. The type of shortfall is domain-specific and originates either from exogenous income losses driven by disruptions in employment patterns such as job loss or sickness, or from discretionary income losses driven by households’ deliberate life-course choices such as taking time off from work to raise a family or to enroll in educational programs. The former is largely outside individuals’ control and affects a larger share of society, whereas the latter is a function of the opportunity costs of incurring such income loss and depends on the expected size of the social policy shortfall. For example, the financial and economic burden of taking (unpaid) time off work, college or university degrees, training programs, or private childcare can raise opportunity costs significantly if these life-course choices are not of incompletely supported by the welfare state or protected by employment regulation. High opportunity costs can put many of these option out of reach from some households. In sum, the social policy shortfall captures the size and type of financial gaps that households have to shoulder, but it does not affect all households equally as I will show in the empirical chapters of this dissertation.

The second factor—the credit regime—operates at the macro-level and influences the extent to which individuals can access to credit market and borrow money to compensate for social policy shortfalls. Some countries like the U.S. and Denmark have what I call a permissive credit regime that channels capital toward households and incentivizes borrowing by households through regulatory and fiscal policies. Other countries like Germany and Japan

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16See, for example, Crouch (2008); Krippner (2011); Montgomery (2013); Prasad (2012); Warren and Tyagi (2003). Homeownership and mortgage debt have received more attention and generated a larger body of work, suggesting that in countries with high homeownership rates and larger mortgage markets, welfare states are less comprehensive because owning a home provides economic security as a form of self-insurance and reduces the financial needs of pensioners during retirement (Conley and Gifford 2006; Kemeny 2001; McCarty, Poole and Rosenthal 2013; Schwartz and Seabrooke 2008). These claims have been substantiated and expanded by evidence suggesting that increases in house prices make homeowners less supportive of fiscal redistribution and, correspondingly, political parties more likely to cut spending during boom times (Ansell 2014).
have a restrictive credit regime that tends to divert capital flows away from households, thus limiting individuals' access to credit markets. The structure of the credit regime therefore determines if credit markets can fulfill social policy functions and allow households to bridge financial gaps. In other words, households only borrow money to compensate for social policy shortfalls in cases where the credit regime grants them sufficient access to credit.

Implications for Social Stratification and Popular Support for the Welfare State

Studying the relationship between credit markets and social policies has political and socio-economic implications. Credit is a double-edged sword. It can help families address temporary income shortfalls during unemployment or allow them to seize social opportunity by leaving work to care for children or finance educational programs, but it can also amplify risks and increase the financial burden on families that are already economically disadvantaged. Debt repayments further constrain households' financial scope and make them more vulnerable to changes in interest rates, future income shocks, or sudden higher expenditures, at worst resulting in arrears, default, and bankruptcy. The potential risks of relying on credit instead of social policies to bridge financial gaps point to a fundamental difference between the two "modes" of addressing social risks and seizing social opportunity. Welfare states, with all their social policy programs and government transfers, are claims on entitlements based on past insurance contributions or universal social rights. Credit flows, by contrast, are financial streams from the future based on the promise and expectation of the debtor to repay the borrowed amount with interest.

A system that grants financial support based on expectations as in the case of credit instead of entitlements and guaranteed claims as in the case of social policies favors some households over others and has significant downstream consequences for social stratification, politics, and public opinion. Substituting credit for social policy functions can undermine social solidarity and support for publicly-funded social policies. If middle- and high-income households perceive credit as a private alternative to social policies, they may no longer be willing to support public policies that tend to benefit lower-income households. This is either because debt repayments imposes an additional financial burden on individuals, because using credit makes them feel personally responsible for their economic and financial well-being and less likely to assume social responsibility for the economic fate of others through a publicly-funded welfare state, or because credit allows those who are economically secure to opt-out of public social services, safeguarding the returns to their private investments. For these reasons, individuals who go into debt may be less likely to support public social
policies. Moreover, credit distributes economic risks and social opportunities differently across individuals since not everyone has equal access to financial markets. Lower-income households already pay higher interest rates for credit than higher-income households and often spend a larger share of their incomes on debt repayment, which can increase their economic insecurity. By contrast, credit-financed social opportunities, for example to take time off work, to enroll in educational programs, or to finance private childcare come with high opportunity costs and may therefore only be available to a smaller group of households.

I develop this theoretical framework in greater detail over the course of the following sections. I shed light on the extent to which households across countries are exposed to and affected by social policy shortfalls and on the role credit markets play in enabling households to bridge financial gaps. I begin by demonstrating that two big trends have influenced households’ income volatility: First, disruptions in employment patterns and life-course trajectories in many countries expose households to exogenous and discretionary income losses, respectively. Second, I show that social policies provide less generous safety nets and incomplete coverage of various socio-economic risks. The resulting social policy shortfalls expose households across countries to considerable financial gaps. Next, I discuss the structure of credit regimes and delineate how the interaction of institutional complementarities between banks, households, and firms, the regulatory and fiscal policy environment, and the political coalitions that sustain them either restricts or permits lending to and borrowing by households. I then bring the pieces of the argument together and explain the variation in debt across and within countries and the circumstances under which households rely on credit to compensate for the social policy shortfall. I conclude by discussing the socio-economic and political consequences of borrowing money to address social policy shortfalls and, specifically, of using credit as a substitute for publicly-provided policies.

1.1 The Social Policy Shortfall

Over the past decades, the working and family lives of many households across the OECD world have changed. Individuals’ employment patterns and life-course trajectories became more disrupted as Fordist economies with stable career paths, government- or firm-based social safety nets, and single-breadwinner households have transitioned into flexible knowledge economies with more flexible labor markets and new family arrangements. This resulted

17I adopt the language of life course to capture changes and disruptions in individuals careers, educational choices, and family formation. For an overview of sociological approaches to life courses see, for example, Mayer (2009).
in two distinct types of income losses and financial burdens: First, individuals experience *exogenous income losses* that are associated with disrupted employment patterns such as unemployment spells or precarious forms of employment that affect larger segments of society. These are largely beyond individuals' control. Second, individuals also experience *discretionary income losses* that are associated with life-course choices such as taking time off from work to raise a family and care for children or to enroll in education and training programs. In this case individuals have more influence over these choices and their financial impact. Social policies, however, have often not kept up with the shift toward the knowledge economy and inadequately address both types of income losses and leave households with a greater financial burden. The combination of exogenous and discretionary income losses and shrinking financial support from the welfare state results in what I refer to as *social policy shortfall*.

There is significant variation across and within countries in the size of these social policy shortfalls. On the one hand, income losses and the resulting financial gaps depend on country-specific labor market structures that shape individuals' work experience, including the frequency unemployment spells, the numbers of temporary or part-time jobs, or the average employment tenure. Financial gaps also depend on institutions and social norms that shape families' life-course choices such as whether to take time off work to care for family members or to get education and further training. On the other hand, countries differ in the degrees to which social policies such as unemployment insurance or paid family leave mitigate the two sources of income losses and provide financial support to affected households. In sum, the combination of the frequency of events that lead to income losses and the efficacy of the welfare state to bridge the financial gaps of such income losses shapes the size of the social policy shortfall and how it varies across households. In the following sections, I discuss the two elements of the social policy shortfall, exogenous and discretionary income losses on the one hand and declining financial support from the welfare state on the other in greater detail.

### 1.1.1 Disrupted Employment Patterns and Fragmented Life-Course Trajectories

The first element of the social policy shortfall is about households' income losses. Two different kinds of income losses are particularly common in the knowledge economy: exogenous income losses are the result of social risks stemming from disruptions in employment patterns. Unemployment, more frequent job switches, or variable work hours in more precarious
types of jobs are examples of employment patterns associated with exogenous income losses. They are largely outside the influence of individuals and affect a broader segment of society. By contrast, discretionary income losses are the result of individuals' deliberate choices and arise because of social opportunities and life-course choices such as taking leaves of absence for children or enroll in educational or training programs. These choices are driven by the opportunity costs of incurring such an income loss and therefore less widely available.

**The Financial Impact of Disrupted Employment Patterns**

The stability of employment trajectories enjoyed by households of the Fordist-1970s is no longer the reality for most households today. Deindustrialization, declining manufacturing jobs, and the growth of service sector employment are among the key consequences of the broader shift from a Fordist economy to a knowledge economy and have exposed many households to more unstable and volatile employment and income trajectories. As panel (a) in Figure 1.1 shows, the decline in manufacturing jobs has affected virtually all advanced economies, albeit to different degrees.

**Figure 1.1: Changing Nature of Employment in OECD Countries**

![Graphs showing changing nature of employment in OECD countries](image.png)

*Notes:* The dots show country-year observations. Countries located in the north-west quadrant experienced an increase in the respective metric over time, those in the south-east quadrant experienced a decrease. Countries on the 45 degree line saw no change. Employed individuals as a share of the total labor force. Employment tenure is measured as the length of time employees have been working with their current employers. Self-employed individuals are excluded. *Source:* Comparative Welfare States Data Set (2014).

Yet identifying the driving forces behind these trends and the reason why certain countries deviations from it is still subject to debate. The integration of trade and capital markets and the resulting increase in international competition have put more pressure on

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18 I do not attempt to explain in depth the causes of these developments and rather focus on its consequences for households' financial situation.
labor markets, particularly in the manufacturing sector, to compete for prices and flexibility. Not all countries are affected equally, however. Much depends on how deeply they are integrated into global markets (Autor, Dorn and Hanson 2013; Feenstra 2010). Technology and endogenous changes in productivity have also influenced the structure of labor markets and their occupational landscapes. Earlier research argued that skill-biased technological change operates through two channels: technology replaces the skill-set of low-skilled workers and made them redundant, while it increases demand for highly-skilled workers whose skill-set complements new technologies (Autor, Katz and Krueger 1998; Berman, Bound and Machin 1998; Katz and Murphy 1992). More recent work, however, sheds doubt on the theoretical underpinning of this model in light of contradicting empirical findings. Instead, the dominant arguments highlight that markets have become polarized by skills because technology substitutes for jobs with routine tasks, typically found in jobs with intermediate skills, and increases demand for both low- and high-skilled jobs. The middle of the skill distribution is hollowed out (Autor and Dorn 2013; Emmenegger 2012; Goos and Manning 2007; Oesch 2013).19

Under the impression of competitive market pressure, employers’ preferences, and partisan ideology, policymakers across the advanced economies began to deregulate labor markets in an attempt to make them more flexible and allow for faster labor turnover (Palier and Thelen 2010). In countries where labor markets were already flexible, skill-based wage inequality further amplified the difference between highly-skilled workers seizing high-quality jobs and low-skilled workers ending up in low-quality jobs, often with limited social benefits. By contrast, in countries with more regulated labor markets, policymakers began to segment labor markets into a protected core of “insiders” in standard, long-term employment and a growing, exposed periphery of “outsiders” in non-standard employment and flexible or temporary jobs with fixed-term contracts (DiPrete et al. 2006; Emmenegger 2012; Rueda 2007).20 These shifts toward labor market dualization were less pronounced in countries where permanent jobs were already weakly protected, allowing for fluid labor market movements (Booth, Dolado and Frank 2002; Peters 2008). The flexibility of labor markets comes at the expense of more frequent job-to-job switches with higher income volatility and more precarious jobs in the low-skill and low-pay segment with unstable and shorter work hours. Panels (b) and (c) in Figure 1.1 above reflect these trends, showing that in many countries employment tenure rate have declined over time. In the U.S. and Denmark, weak employ-

19 For an overview of the recent debate on the links between occupational changes, skills, and technology see Acemoglu and Autor (2011) and Emmenegger (2012).
20 For an overview see Davidsson and Emmenegger (2012).
ment protection and flexible labor markets result in relatively short employment tenures. In other countries such as Germany or the Netherlands, dualization is the dominant force. The core workforce with long and stable employment patterns still constitutes the majority of the labor force, but marginal and non-standard employment patterns are on the rise.

The shift from a Fordist economy toward a skill-biased knowledge economy, manifested in the deregulation of labor markets and the rise of more volatile and non-standard employment patterns, has profound implications on households' income trajectories. Unemployment, one of the most severe causes of disruptions in employment patterns, was once considered the result of cyclical and short-lived economic downturns but has become a systematic and enduring problem in many OECD countries. In addition to long-term unemployment, many households began to experience more frequent transitions in and out of employment, resulting in shorter spells of unemployment (Kalleberg 2009; Schmid 2002). Yet job loss is not the only source of income volatility. The flexibility demanded in many jobs leads to further disruptions in incomes, for example because job tenure rates have declined and individuals switch jobs more frequently or because work schedules are less predictable and working hours more volatile. This is particularly pronounced in the U.S., as Morduch and Schneider (2017) document, but also increasingly common in other European countries. In all these cases, households experience unexpected, exogenous income losses, resulting in larger financial burdens.

The Financial Impact of Life-Course Choices

Disrupted employment patterns and exogenous income losses are only one side of the knowledge economy. Deliberate choices about life-course trajectories and family arrangements are another. These choices are about taking time off work, educational attainment, or child-rearing, lead to what I call discretionary income losses and, in some cases, higher expenditures. What distinguishes them from unexpected income shocks is that these choices are shaped by the opportunity costs of incurring such a discretionary financial burden, which in turn depends on the expected size of the social policy shortfall. Consider again the contrast between a family living in the 1970s and one living today. The typical family about forty years ago had a single breadwinning, in most cases male household head, while the wife typically stayed at home and took care of children. The husband’s income had to suffice for the whole family. But many households these days no longer subscribe to this family model. Family arrangements are more varied, including dual-earner couples, families with one full-time and one part-time earner, and single-parent households. The overall decline of
the male breadwinner model, but also deviations from this trend, are clearly reflected in the overall rise in female labor market participation over the last few decades (Figure 1.2). Since

Figure 1.2: Rising Female Employment in OECD Countries, 1980 to 2010

Notes: The dots show country-year observations. Countries located in the north-west quadrant experienced an increase in the share of female employment, those in the south-east quadrant experienced a decrease. Countries on the 45-degree line saw no change. Self-employed individuals are excluded. Source: Comparative Welfare States Data Set (2014).

the 1970s, female employment rates have gone up in many countries, often associated with more jobs in the public sector (for example in the Nordics) or in the low-skilled or part-time service sector (for example in Germany) (Iversen and Rosenbluth 2010). While the growth in female employment has reduced income volatility for dual-earner married couples, two sources of income no longer provide the same financial buffer as it once did. Instead, many families depend on dual incomes as living costs and expenses have grown (see Warren and Tyagi 2003).

The choice of having children also comes with important financial considerations and can lead to income losses and larger financial burdens. In the male-breadwinner model, the wife typically provided unpaid childcare services by staying at home with children (Esping-Andersen 1999, ch. 4). With more women now working full time, this option has become less attractive for many families. Family members rather take time off work to care for their children, send them to daycare, pre-school, or kindergarten, or draw on informal networks of relatives, friends, or community centers. The first three options, however, can come with high opportunity costs and exclude some families from considering these options. In cases where parents take maternity or paternity leave, families may have to shoulder income losses when taking time off work. The size of the income loss and the financial burden thus

\footnote{On the various financial and economic costs of parenthood see, among others, Adda, Dustmann and Stevens (2017); Blau and Kahn (2017); Goldin (2014); Olivetti and Petrongolo (2016).}
depends on the generosity of financial support during periods of leave from the welfare state or, in some cases, employers. In cases where parents decide to send their children to care facilities, the financial burden is a function of the cost of childcare services, which similarly varies by how much these services are publicly subsidized. If there is no publicly-subsidized parental leave scheme or childcare program or if employment regulations do not mandate job-protected maternity leaves (paid or unpaid), taking time off work or financing childcare can become costly. Only if families consider the opportunity costs worthwhile, for example if neither partner wants to give up their career or because the family depends on two sources of income, will they choose to accept the income loss.

Consider the contrast between the U.S. and Denmark in the domain of family leave policies. Most American families face an extreme case of social policy shortfall since publicly-financed paid leave policies are virtually non-existent. For low-income families, taking time off to care for children becomes prohibitively expensive, both financially and because in many cases they are not eligible for unpaid leave, resulting in very high opportunity costs. Despite the Family and Medical Leave Act (FMLA), which allows families with new-born children or family members with serious medical conditions to take unpaid job-protected leave, around 40% of workers are ineligible for family leave because their employment history is too short or the FMLA does not apply to their employer (Ray, Gornick and Schmitt 2008). Middle- and higher-income families, on the other hand, often rely on two incomes and work in jobs that grant periods of leave (yet often unpaid), reducing the opportunity costs of parental leave. Yet they still face the large financial burden of the social policy shortfall because of lacking or incomplete support from the welfare state. For Danish families, by contrast, the opportunity costs of taking parental leave are low, regardless of income, because of a more comprehensive welfare and labor market regime that provides generous leave compensation and employment protection. The size of the social policy shortfall, however, still varies across households because government transfers are, in many cases, income-dependent.

Educational choices follow a similar logic. If the opportunity costs of enrolling in university or other educational programs instead starting a job, or taking a leave of absence from a current job are too high, for example if the financial burden of attending college is too large in light of foregone income, this option will not be available for those families. Despite the evidence that a college degree on average leads to higher income and better-quality jobs in the future, the cost of attending college can outweigh these benefits.

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22 Around one-fourth of private employers in the U.S. offer some form of paid maternity leave (Ray, Gornick and Schmitt 2008).
23 Despite the evidence that a college degree on average leads to higher income and better-quality jobs in the future, the cost of attending college can outweigh these benefits.
result from unexpected and discretionary disruptions in employment patterns and life-course choices.

1.1.2 The Changing Nature of Welfare States

The second element of the social policy shortfall is the degree to which welfare states mitigate and compensate for these exogenous and discretionary income losses and financial gaps. Welfare states achieve this through two different types of social policies. Traditional **social consumption policies** are designed to provide income support through public insurance for unemployment or sickness and redistributive programs such as social assistance for the poor.\textsuperscript{24} By contrast, **social investment policies** are future-oriented supply-side policies that aim to increase individuals' productivity by investing in education, active labor market programs that emphasize retraining and employability, and family policies that provide financial support for periods of leave and childcare.\textsuperscript{25}

Welfare states, however, provide less financial support throughout families' lives than they used to, in large parts because of retrenchment and cuts in benefits and because their scope is increasingly at odds with new forms of employment and life-course trajectories. Social consumption policies, typically associated with the postwar welfare state and families' single-breadwinner model, have come under pressure for economic and fiscal reasons but also because of increasing demands due to rising long-term unemployment. Policymakers attempted to address these challenges with two strategies. On the one hand, they began to retrench social consumption policies by significantly tightening eligibility criteria and cutting benefit levels as well as entitlement periods. When individuals lose their job or experience other kinds of income shocks, they are left with larger financial gaps and growing social policy shortfalls because the welfare state compensates for a smaller part of the resulting income loss. On the other hand, policymakers adopted social investment policies that focus on employability, education and retraining, and support of families through subsidized leave programs and childcare.

Yet countries differ significantly in the degrees to which policymakers enacted these strategies (Bonoli 2007). Figure 1.3 compares the trajectories of social policy spending across three different policy domains that capture social consumption and investment policies in OECD

\textsuperscript{24}Public pensions are typically grouped with social consumption policies but not part of this project.

\textsuperscript{25}On social consumption and social investment policies see, for example, Ansell and Gingrich (2015); Hemerijck (2013); Morel, Palier and Palme (2012) and the contributions in Beramendi et al. (2015).
Countries located in the south-east quadrant increased their spending from 1990 to 2010, those in the north-west quadrant decreased their spending. Panels (a) and (b) show the variation in changes from spending on passive unemployment support to active labor market policies (ALMP), respectively. The Nordic countries, in particular Denmark, now devote fewer resources toward unemployment spending and more toward ALMP. The continental welfare states such as Germany or the Netherlands have changed much less and still emphasize passive unemployment support, while liberal welfare states like the U.S. and the U.K. have changed little over time and spend less on both active and passive policies. Most countries have expanded their spending on family policies (panel (c)), but there are still significant cross-national differences, ranging from the U.S. with expenditures of less than one percent of GDP to the Nordics with expenditures of almost four percent of GDP.

The spending patterns displayed in Figure 1.3 reflect at least in part changes in governments’ policy priorities over time. Mounting economic and fiscal pressures on the welfare state due to rising levels of unemployment, growing demands from recipients, and cost-cutting strategies of employers, as well as partisan politics and ideology, have led to consid-

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Note: The dots show country-year observations. Countries located in the north-west quadrant have increased their spending from 1990 to 2010, those in the south-east quadrant have decreased their spending. Countries on the 45-degree line saw no change. Expenditures include all public and mandatory private expenditures. Source: Comparative Welfare States Data Set (2014).

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26 Spending on social policies is an imperfect indicator of social policy generosity since it is influenced by economic growth and the number of benefit recipient and also masks information on the distribution of expenditures within countries. Yet it still serves as a useful approximation of social policy trajectories across countries and over time. Using the replacement rate for unemployment and sickness insurance yields similar trends, but this only captures the social insurance dimension of the welfare state. Chapter 2 provides greater details on changes in social policies for the country cases of Denmark, Germany, and the U.S.
erable social policy retrenchment. What the spending data mask, however, are restrictions in access to social policy programs and reductions in benefit levels and entitlement periods, mostly in the domain of social consumption policies. This has further shifted the financial burden of income losses onto the shoulders of households. In many cases, eligibility criteria for social benefits have been tightened and require longer, often uninterrupted employment history to be eligible for benefits. Individuals employed in non-standard work arrangements with fewer work hours and more frequent job switches can more easily fall through the safety net if they do not meet these eligibility criteria. Means-tested programs were already more common in liberal market economies but have found their ways into other welfare states as well, for example when Germany replaced earnings-related unemployment benefits with means-tested flat-rate benefits in 2005. These restrictions made more individuals ineligible for benefits and further weaken their financial situation.

With social consumption policies and their focus in passive income support in decline, many policymakers reoriented the nature of social policies toward activation and employability, emphasizing retraining and employment support (Bonoli 2013). At the same time, they also privatized other domains of social policies and replaced publicly-provided services with private market-based solutions. Defined-contribution pension schemes and private health insurance plans have become alternatives to defined-benefit plans and publicly-provided health services and, again, shift the financial burden of insurances or pensions onto individuals (see Gingrich 2011; Hacker 2004; Häusermann 2010). These services often add additional costs for beneficiaries and are often less generous than the public alternative.

The knowledge economy has also created new types of social risks and social opportunities that existing welfare programs cover only to limited degrees or not at all (see Taylor-Gooby 2004). Examples include the rise of precarious types of jobs that no longer provide the same employment security and social benefits as standardized full-time jobs or job-to-job switches with fluctuating earnings. These are new sources of economic risks and expose households to greater economic and financial risks than before (Eichhorst and Marx 2016). But the flexibility of the knowledge economy also offers “social opportunities” for families that deliberately want take a leave of absence from work to care for children or get more training and education. Social investment policies that offer free or subsidized childcare, paid parental leave schemes, or opportunities for education and retraining are part of governments’ efforts to help families seize these social opportunities. Yet as panel (c) in Figure 1.3 shows,

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27 See Allan and Scruggs (2004); Hemerijck (2013); Huber and Stephens (2001); Pierson (2001).
countries vary in their support of families and often impose considerable financial burdens on families that want to take advantage of these social opportunities.

The lack of coverage for new types of social risks and opportunities is in many cases the outcome of political inaction as policymakers have failed to adapt social policies to new labor market and life-course realities, a process known as “policy drift” (Hacker 2004; Streeck and Thelen 2005; Thelen 2004). Consider the example of more frequent job-to-job switches. Individuals more often move from one job to another without being unemployed in-between. But in many cases they earn less in their new job than in their previous one (Schmid 2002). For some, lower pay in a new job is a temporary setback and can be compensated for with a higher-paying job in the future. For others, however, fluctuating incomes because of job-to-job switches are a persistent and harmful problem (Morduch and Schneider 2017). Concerns about unstable earnings caused by job-to-job switches have led policymakers and academics to consider wage insurance schemes that would provide financial assistance for workers who lost their job but cannot find a new one with similar earnings (see, for example LaLonde 2007). Yet to date, no welfare state in the OECD has public insurance programs in its toolkit that could absorb parts of such income losses.

In sum, many welfare states have not kept up with changes in labor markets and life-course trajectories and leave households with growing financial gaps as benefits and entitlement periods have been cut and new types of social risk and social opportunities are only partially or not at all covered by existing government programs. The result is a social policy shortfall between households’ financial needs and welfare states’ financial support. In chapter 2, I empirically document changes in the two elements of the social policy shortfall in Denmark, the U.S., and Germany and develop a macro-level measure of this shortfall by comparing the volatility of households’ gross and net incomes over time. In the next section, I show why the structure of a country’s credit regime plays an important role in helping households to compensate for financial gaps left behind by social policy shortfalls. In countries where a permissive credit regime grants households easy access to credit, households struck by social policy shortfalls increasingly go into debt to pay for basic social services and

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28 In the U.S., wage insurance for workers who lost their job to foreign workers has been introduced under Bush Jr. and extended under Obama. See also “How Wage Insurance Could Ease Economic Inequality,” The New York Times, March 11, 2016, or Obama’s 2016 State of the Union Address.
1.2 Credit Regimes and Household Debt

Over the past decades, the importance of financial markets for economies as well as for individuals has grown considerably. Individuals interact with financial markets when they take out mortgage loans to buy a house, finance college tuition or retraining programs through student loans, invest their pension savings in mutual funds, or use their credit card to "smooth" financial gaps. The rising influence of financial markets on economies and societies manifests itself in growing levels of household debt in most but not all OECD countries. The panels in Figure 1.4 compare changes in household debt as a share of GDP and as a share of disposable income across a set of OECD countries from 1995 to 2015, displaying considerable cross-national variation. Panel (a) measures the overall household debt relative to the size of the economy and shows that with the notable exception of Germany and Japan, all countries in the sample saw an increase in their debt-to-GDP ratios. Denmark, Australia, and the Netherlands stand out as the countries with the highest debt-to-GDP ratio in 2015, even higher than other liberal market economies and almost three times as high as Germany's or France's. Panel (b) measures debt as a share of households' disposable income, thus capturing households' debt burden, and reveals similarly strong increases over time yet large differences across countries. From 1995 to 2015, the debt burden of Danish households has grown by over 50%, while that of Dutch households has nearly doubled, leaving households in both countries with about three times more debt relative to their incomes than German households and over two-and-a-half time more debt than American households. Across the OECD, household debt as a share of disposable income has grown from an average of 78% in 1995 to 134% in 2015.

These debt patterns, both in terms of levels and change over time, cut across the conceptual boundaries of traditional comparative political economy typologies of welfare regimes (cf. Esping-Andersen 1990, 1999). Countries such as Denmark or the Netherlands have the highest debt ratios, not the liberal market economies like the U.S. or U.K. Instead, there is strong variation within common country groups, for example the contrast between two coordinated market economies: Germany with low levels of debt and the Netherlands with one of the highest levels.

The variation in debt levels across countries and over time raises a series of questions.

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29 The scholarly literature captures the rise of finance in the concept of financialization (see van der Zwan (2014) for an overview of various definitions). The influence of finance on economies, societies, and policymaking has been studied, among others, by Fligstein and Goldstein (2015); Krippner (2005, 2011); Langley (2008); Mackenzie (2008).
What explains cross-national differences in debt trajectories, and why do countries with different welfare regimes share similar or even more extreme debt patterns? And, perhaps more importantly, which households are taking on debt, and for what reason? I propose new answers to these questions by highlighting the interplay of income losses and rising expenses, welfare states, and credit regimes. My argument is that the variation in household debt across and within countries is a function of the size and nature of the social policy shortfall that households experience and the degree to which the credit regime grants households access to loans. In the following section, I show how credit can fulfill social policy functions and how regulatory and fiscal policy choices make credit regimes restrictive or permissive.

### 1.2.1 Households’ Demand for Credit

One of the key functions of financial markets is to provide financial liquidity that allows individuals to fill financial gaps or finance expenditures. Credit plays an important role in
many families’ daily lives but is rarely seen as part of the welfare regime. For individuals who borrow money to fill financial gaps in light of a social policy shortfall, credit essentially fulfills social policy functions. The ability to borrow to bridge financial shortfalls becomes an even more vital coping mechanism when individuals have insufficient liquid savings.\textsuperscript{30} The life-cycle theory of savings in economics assumes that rational, forward-looking individuals want to smooth consumption over their lifetime and therefore reach optimal decisions about how much of their income to save and how much to consume.\textsuperscript{31} Decisions to accumulate savings, however, are demanding and require individuals to gather information and make assumptions about their future income trajectory and the risk of income losses. Individuals might not be able to compute the correct amount of savings, for example because of financial illiteracy (Lusardi 2008; Lusardi and Mitchell 2007) or because they are myopic and underestimate risk (Benartzi and Thaler 1995). Even if individuals were able to estimate the savings rate correctly, many lack self-control or are too impatient to put aside savings (Ameriks, Caplin and Leahy 2003; Gathergood 2012; Heidhues and Kőszegi 2010). For these reasons, households’ savings rates are smaller than predicted by the life-cycle theory. Instead, borrowing has become a crucial source for many households to fill short-term financial gaps in light of limited alternatives.\textsuperscript{32}

Unsecured debt, which typically includes revolving debt such as credit card loans, overdraft provision, or other non-collateralized loans from financial institutions such as personal loans, deferred payments on bills, or educational loans, plays an important role in this context. Individuals with no or limited assets or who are otherwise financially constrained can potentially draw on unsecured debt to transfer financial resources from the future to the present. In recent decades, households have also begun to rely on certain types of secured loans, for example home equity loans or home equity lines of credit, to meet income shortfalls or finance higher expenditures (see, for example, Hurst and Stafford 2004). In sum, access to credit markets allows households to bridge financial gaps left by social policy shortfalls.

1.2.2 How Credit Regimes Influence Access to Credit

Whether households are able to tap into credit markets and borrow money to compensate for social policy shortfalls depends on the structure of what I call a credit regime. This

\textsuperscript{30}I use the term “liquid” savings to refer to assets that individuals can draw on immediately such as cash, deposits in checking or savings accounts, or stock ownership, but not illiquid assets such as pension funds or real estate.

\textsuperscript{31}For a review of the literature on the life-cycle model see Browning and Crossley (2001).

\textsuperscript{32}As I will show below, savings decisions are not only driven by households’ behavior but also shaped by macro-level political choices.
concept captures the financial ecosystem of political and institutional factors that influence how easily individuals can access credit markets.  

Monetary policy, and in particular central banks' interest rates, set the broad conditions for lending in the economy. When interest rates drop, credit will become cheaper and may incentivize lenders to offer more loans. Since lenders' profit margins decline as interest rates go down, they may further target high-risk individuals and lend to them at higher interest rates, thereby expanding access to credit into the subprime sector. For most OECD countries, monetary policy is not under the direct control of governments but delegated to independent central banks, which set monetary policy in line with an inflation or unemployment target, or a combination of both.  

Regulatory policies further influence the supply of credit, either directly by deregulating capital flows or indirectly by shaping the conditions under which financial institutions can lend to households, and determine what types of financial products are available and who can offer them. First, governments can influence credit flows by rationing credit, tightening bank lending conditions, or imposing credit and interest ceilings that determine terms of lending through interest rate caps or limits on maximum loan amounts. Many OECD countries dismantled these policies during the 1980s and early 1990s as part of a deregulatory agenda toward financial liberalization (Debelle 2004; Kaminsky and Schmukler 2008). Restrictions on international capital flows were lifted during that time, allowing banks to directly access global capital markets and thereby freeing them from the constraints of only relying on domestic capital (Cohen 1996; Simmons and Elkins 2004). For most countries, the increase in cross-border capital flows has resulted in a considerable expansion of domestic credit and growing competition as more banks and other lenders entered credit markets. The deregulation of financial markets and banking services went furthest in the Anglo-Saxon countries and, albeit to a lesser degree, the Nordics. For small states and open trading nations, access to finance is an important instrument to seize transnational economic opportunities (Katzenstein 1985). Examples of such regulatory choices that facilitated financial flows and made access to credit easier are the phasing out of Regulation Q in the U.S., which had

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33 An influential literature has argued that financial system can be grouped into bank-based and market-based systems, but this research tends to focus more on corporate governance and less on consumer lending (see, for example, Allen and Gale 2000; Culpepper 2005; La Porta, Lopez-De-Silanes and Shleifer 1999; Zysman 1983). For an overview of factors driving business decisions to lend see, for example, Zinman (2014, 2015).

34 The Bank of England was formally made independent in 1997.

35 On the well-documented link between cross-border capital flows and credit expansion see, among others, Jordà, Schularick and Taylor (2013); Lane and McQuade (2014); Mendoza and Terrones (2012); Schularick and Taylor (2012).
imposed a maximum interest rate on deposits, the abolition of credit controls in the U.K., Australia, and New Zealand, and the lifting of lending and deposit rate ceiling in the Nordics. By contrast, deregulatory efforts in countries such as Italy, France, or Germany were less comprehensive and often distorted, in part because public-sector financial institutions, most notably in Germany and France, imposed different lending rules than private banks and sought to protect their domestic market position (Girouard and Blöndal 2001).

Second, regulatory policies shape lending conditions, for example by imposing collateral requirements and loan-to-value (LTV) ratios. The loan-to-value ratio is a key lever to determine how much individuals can borrow relative to the value of the underlying collateral asset. In the years leading up to the financial crisis of 2007, LTVs in the U.S. and the U.K. commonly exceeded 100% and allowed households to finance home purchases exclusively through debt without down payments. In Germany, Denmark, or Italy, the typical LTV is capped at 80% and thus restricts borrowing (IMF 2011, p. 117). But lenders have developed additional techniques to manage their credit risks. The securitization of loans, for example through asset- or mortgage-backed securities, is an influential practice that allows lenders to disperse their credit risk by pooling illiquid debt contracts into securities whose tranches can be sold to other investors. This frees up resources on lenders’ balance sheets and is perceived to reduce the overall lending risk, thereby allowing lenders to issue more loans. But as evidence emerged that excessive securitization, particularly in the U.S. and the U.K., had contributed to the growth of subprime loans and, in turn, the financial meltdown, the risk-reducing function of securitization was called into question and replaced by a more skeptical perspective that emphasized its distortionary effects (see, for example, Mian and Sufi 2009; Shin 2009). Securitization practices, like other political and institutional factors shaping access to credit and the overall risk of lending, vary significantly across countries. In 2008, 64% of all residential loans in the U.S. were securitized through mortgage-backed securities, but only 31% in the U.K., 2% in Germany, and 0.1% in Denmark. By contrast, the volume of covered bonds, which are debt securities that remain on lenders’ balance sheets and are backed by a pool of assets that can cover claims in the event of default, was 115% in Denmark, 23% in Germany, and 14% and 0.1% in the U.K. and the U.S., respectively (IMF 2011, p. 117). These numbers reflect at least in part regulatory choices that influence the overall credit risk within a credit regime and thus incentivize or restrict lending to households.

Finally, regulatory policies also determine which financial products are available and who

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36 In addition, cyclical effects, for example changes in the value of the underlying collateral such as houses, have been identified as amplifying borrowing choices (Geanakoplos 2010; Mian and Sufi 2011).
can offer them. In recent years, lenders developed a broad range of financial products that improve overall access to credit by reducing costs and increasing the pool of assets that can serve as collateral. Interest-only mortgages allow the borrower to only pay the interest on the principal balance for a fixed period of time. Only thereafter will the principal balance be amortized. Home equity loans or home equity lines of credit, enable homeowners to use the value of their house as collateral for loans. With rising house prices, the inflation of the underlying asset also increases the potential size of home equity loans. With the product range widening, lending services are no longer limited to banks. In many countries, the non-bank sector plays an increasingly important role in offering loans to a broader segment of society and puts traditional banks under pressure. The spectrum of non-bank lenders ranges from pawn shops to online peer-to-peer platforms, all of which offer loans to varying types of borrowers. In cases where private lenders are unwilling to loan to certain societal groups, governments may sidestep private lenders and offer loans directly, for example through government-sponsored enterprises (GSE), or guarantee loans themselves. Student loans are a case where private lenders are typically reluctant to bear the risk of students’ defaulting on their loans, and governments either provide implicit or explicit loan guarantees or take over lending themselves. In others cases, the government may partner with private loan companies and offer subsidized loans for special purposes, as in the example of New York City’s “Middle Class Child Care Loan Program” mentioned above.

Besides regulatory policies that influence how easily households can access credit markets, fiscal policies are important another lever through which governments incentivize households to borrow money. Most consequential are provisions in the tax code that allow borrowers to deduct interest payments from their tax liability. In many countries, tax provisions give preferential treatment to mortgages and related interest payments as part of a broader government intervention to encourage homeownership. In combination with collateralized borrowing, for example in the form of home equity loans, these policy choices exert sizable influence on households borrowing choices and thus direct credit flows toward the household sector (Poterba 2002). But alleviating credit constraints of individuals also reduces savings rates because household know they can tap into credit markets more easily (Jappelli and Pagano 1994). When governments use fiscal policies to favor borrowing over saving, they amplify this behavior and can make households less likely to build up a financial cushion via savings and more likely to take on debt instead. Interest subsidies, for example in the case of private (but subsidized) student loans or implicit price subsidies for mortgages through the

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37 On the informal banking system in the U.S. see Baradaran (2015); Servon (2017).
activities of GSEs in secondary markets, for example those of Fannie Mae and Freddie Mac in the U.S., have a similar effect and make loans cheaper and thus widen access to credit (Zinman 2015).

In sum, the structure of these credit regimes is the outcome of institutional and political factors that attempt to stimulate economic growth either through deregulated financial markets and foreign capital inflows, boosting the financial sector and resulting in strong lending to households, or through deliberate choices to channel financial flows toward the business sector and restrict lending to households by favoring savings instead. In Chapter 3, I describe in greater detail the credit regimes of Denmark, the U.S., and Germany and shed light on households' ease of access to credit in each regime.

In the following section, I put the different parts of the theoretical framework together, arguing that the interaction of the size of the social policy shortfall and the permissiveness of the credit regime to grant households access to credit explains variation in households' borrowing choices across and within countries.

1.3 The Argument: Credit as Private Alternative to Social Policies

Credit is rarely seen as part of the welfare regime, but because it can mitigate the consequences of social risks and help individuals seize social opportunity, it has come to serves social policy functions. Credit markets, defined as financial markets for loan products including mortgages, student loans, personal loans, and credit cards, share functional similarities with welfare regimes, defined as the bundle of policies and institutions that provide social services and insurance for individuals. In essence, welfare states fulfill three main functions through a host of social policy programs and tax expenditures. First, they distribute resources across individuals, typically from higher-income to lower-income. Second, they provide insurance against various forms of risk such as unemployment, sickness, and old age through a mix of public insurance programs. Third, they enable and promote social opportunity and social mobility through public investment in education, child care, or various programs that allow family members to take time off work for maternity or paternity leave. Countries differ in the degrees to which their welfare states redistribute resources, mitigate social risk, and enable social opportunity as opposed to individuals themselves.

At first, it may seem surprising to think that credit markets can fulfill functions that are similar to social policies, not least because in many cases welfare states were designed
to alleviate detrimental consequences of markets' vagaries. Credit markets mirror welfare state's function in three crucial ways. First, they also redistribute resources—yet not across individuals but through time: from the borrower's future self into the present. Second, they provide financial liquidity in the form of loans to allow individuals to address income shortfall or to meet higher expenditures. Third, they enable individuals to invest in assets, both financial assets such as houses or equities as well as personal assets such as education (student loans) or children (childcare).  

Table 1.1 contrasts the functional similarities between welfare states and credit markets. Yet as I will argue in later sections, the functional similarities should not belie that fact that credit markets follow a very different logic than welfare states.

Table 1.1: Functional Similarities Between Welfare States and Credit Markets

<table>
<thead>
<tr>
<th>Function</th>
<th>Welfare states</th>
<th>Credit markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redistribute resources</td>
<td>Across individuals</td>
<td>Across time</td>
</tr>
<tr>
<td>Mitigate social risk</td>
<td>Insurance against unemployment, sickness, and old age</td>
<td>Provision of financial liquidity</td>
</tr>
<tr>
<td>Enable social opportunity</td>
<td>Public education, housing, and family policies</td>
<td>Investment in personal and financial assets</td>
</tr>
</tbody>
</table>

My core argument is that households draw on credit markets and borrow money to address financial gaps between income losses and higher expenses on the one hand and welfare states' declining financial support on the other—a gap I refer to as social policy shortfall. But whether households borrow money and go into debt to address the social policy shortfall is contingent on the credit regime they live in. We can therefore explain variation in debt levels across countries and across households as a function of these two central factors: first, the size and type of the social policy shortfall determine households' demand for credit to fill financial gaps. Second, the structure of a country's credit regime influences how easily households can tap into credit markets, thus allowing credit to emerge as a private alternative to social policies.

Types of Social Policy Shortfall

The first factor—the social policy shortfall—is a micro-level variable and captures the size of the gap between households' financial needs and welfare states' financial support in a

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38 On investment in human capital as personal asset see Becker (1976).
given socio-economic context. The social policy shortfall takes two different forms: on the one hand, individuals can experience exogenous income losses, for example due to job loss or sickness. These income losses and the associated financial burden affect a broad segment of society and are the outcome of labor market changes such as more frequent spells of unemployment, fluctuations in work hours and scheduling, or precarious jobs with limited or no benefits. As welfare states in many countries are covering a smaller share of these income losses, households experience growing social policy shortfalls.

On the other hand, individuals can make deliberate life-course choices that lead to discretionary income losses and larger financial burden, for example when family members decide to take time off work to care for children, to pay for childcare programs, or to enroll in education or training programs. But unlike the case of an exogenous income loss, this type of income loss is a deliberate choice and affects a smaller and, in many cases, different segment of society. It is a function of the opportunity costs of incurring such a discretionary income loss and ultimately depends on the expected size of the social policy shortfall. In cases where the discretionary income loss results in a large social policy shortfall and a large financial burden, for example because there is no publicly-subsidized family leave scheme or because the costs of attending college outweigh the current income loss and future income gain, for some families the opportunity costs of choosing to take such income loss are prohibitively high. Only if families consider the opportunity costs worthwhile, for example if neither partner wants to give up their career or because the family depends on two sources of income, will they choose to accept the income loss and the social policy shortfall.

Types of Credit Regimes

The second factor—the credit regime—is a macro-level variable and captures the degree to which credit flows toward household and grants them easy access to credit. In some countries, the credit regime is restrictive and channels credit away from households, for example by favoring lending to the business sector or by incentivizing saving, thereby restricting access to credit. In other countries, the credit regime is more permissive to borrowing by households and makes credit easily available to them. The structure of the credit regime is therefore an important macro-level factor that helps explain variation in household debt across countries and determines whether individuals borrow money if they experience a social policy shortfall. In sum, my argument suggests that the variation in debt levels across countries and across households is driven by the micro-level variation in the size and type of the social policy
shortfall and by the macro-level variation in the degrees to which the credit regime grants individuals access to credit.

To illustrate the intuition behind the argument, consider first the case of a small social policy shortfall. This situation can arise in an environment of stable employment patterns and life-course trajectories with minimal income losses, a comprehensive welfare state that fills financial gaps and provides public services, or a combination of both. The welfare state addresses social risks and guarantees social opportunities and limits households' financial burden. Take the example of unemployment: when unemployment insurance benefits replace a large fraction of prior earnings, social risks are mitigated by the welfare state and keep the gap between earnings losses and government transfers—the social policy shortfall between—small. When maternity leave is subsidized through family policies, social opportunities are guaranteed by the welfare state and, like before, the social policy shortfall is small. Whether the credit regime provides households with sufficient access to credit is irrelevant for households' financial well-being in this case because the welfare state absorbs risks and guarantees opportunities.

Households' financial needs change, however, in the case of a large social policy shortfall. This can be driven by exogenous income shocks and discretionary income losses caused by disruptions in employment patterns and life-course trajectories, respectively, a shrinking welfare state with smaller financial support and declining coverage of social risks and social opportunities, or a combination of both. The shortfall therefore arises in two different domains and imposes a considerable financial shortfall onto households if the welfare state's financial support in each domain is limited. This also means that credit fulfills two separate functions depending on the nature of the shortfall. First, credit can be purely consumption-smoothing, for example when individuals borrow to bridge financial gaps caused by involuntary income losses due to unemployment or sickness. This form of borrowing tends to be concentrated among lower-income households but is increasingly also stretching into the middle rungs of the income ladder and is associated with higher levels of economic insecurity and risk. Second, credit can be a form of investment and tool to harness social opportunity and gain social mobility, for example through housing, education, childcare, or financing voluntary career disruptions and leaves of work. Lower-income individuals typically face high opportunity costs to engage in these social activities that would require this form of borrowing; instead, it is more prevalent among middle- and higher-income individuals who tend to be more economically secure. Credit markets play a crucial role in both cases, by helping households bridge financial gaps, finance investment, allowing them to deal with the financial conse-
quences of economic risks and help them realized social opportunities. How this plays out cross-nationally is a function of risk-reducing and opportunity-enhancing institutions such as unemployment insurance generosity, subsidized childcare, or paid maternity leave, as well as the permissiveness of the credit regime. In cases where the credit regime restricts access to credit to households, for example because financial products are limited or lenders prefer to lend to the business sector rather than to households, households cannot draw on credit markets to compensate for financial shortfalls or finance expenditures. Instead, households *internalize* the financial burden, for example by drawing on savings. By contrast, in cases where the credit regime incentivizes lending to households and provides households with ample and easy access to credit, borrowing money emerges as a viable coping mechanism to respond to the social policy shortfall. In this situation, credit markets fulfill social policy functions in light of declining support by the welfare state.

This theory predicts that credit only emerges as an instrument for households to compensate for the social policy shortfall in cases where the credit regime grants households sufficient access to credit. I further expect that political choices in the welfare and credit regime influence households' borrowing choices. Cuts in social policies and larger financial shortfalls do *not* lead to more borrowing when the credit regime is restrictive. Conversely, improvements in access to credit lead to more borrowing by households that experience a social policy shortfall and were previously liquidity-constrained.

Since the social policy shortfall can arise because of exogenous and discretionary income losses, I test the empirical implications of these domain-specific hypotheses in two separate chapters. Chapter 4 focuses on exogenous income losses caused by disrupted employment patterns such as unemployment or fluctuating work hours. It also studies the effect of a social policy reform that cut unemployment benefits as well as a reform of credit markets that increased access to credit. Chapter 5 turns to the financial burden of deliberate life-course choices such as taking time off work, education, or child-rearing. Both chapters show that households that experience a larger social policy shortfall borrow in cases of permissive credit regimes, but that there is important variation across households in the size and type of the shortfall and the corresponding borrowing response to financial shortfalls.

1.4 Shifting Risks, Opportunities, and Responsibilities

Credit, much like social policies, can provide households with financial liquidity to address income losses and enhance social prospects and opportunities. But it also differs in many
dimensions from publicly-financed social policies, exposes some households to even greater economic risks, and influences social solidarity and public support for the welfare state. In this final section, I argue that there are fundamental differences between relying on credit instead of social policies to compensate for financial shortfalls, to address social risks, and to guarantee social opportunities. Perhaps the most consequential difference lies in the temporal dimension as depicted in Figure 1.5. Social policies are claims to the past based on entitlements from insurance contributions or claims to the present based on social rights and provide legally defined income support. Credit flows, by contrast, are financial streams from the future based on the promise and the expectation of the debtor to repay the borrowed amount with interest.

Publicly-funded social policies rely on social responsibility and solidarity, either through tax-funded redistribution or contribution-funded insurance. Credit, however, can drive a wedge between the social bond among people and shift responsibility for socio-economic risks and social mobility and opportunities from the collective to each individual herself. Debt creates a stronger bond with one’s future self than with others and exercises social control by disciplining the borrower to pay back the loan.

The shift toward a system that grants financial support based on expectations and promises to repay borrowed money in the future as in the case of credit instead of entitlements and guaranteed claims as in the case of social policies favors some households over others and has significant downstream consequences for social stratification and public opinion toward the welfare state. For some, credit is a welcome opportunity to privately finance investment in housing, education, or children, or smooth consumption, thus opting out of the public provision of goods and safeguarding the returns to their private investment. Yet for others borrowing money is the last resort if they have no savings and need to fill financial gaps in light of withering social support. These two different modes of using credit as private

Figure 1.5: Temporal Dimension of Income-Smoothing Mechanisms

![Figure 1.5: Temporal Dimension of Income-Smoothing Mechanisms](image-url)
alternative to welfare programs lead to very different expectations about government social policies and influence notions of social solidarity.

Flow of Resources

The two “models” of addressing income losses and larger financial burdens—either through public insurance and redistributive policies or through borrowing money—differ in their flows of resources as illustrated in Figure 1.6. In the case of publicly-provided social policies such as

Figure 1.6: Two “Models” of Addressing Income Losses and Financial Shortfalls

(a) Public Social Policy

(b) Credit as Social Policy

unemployment and sickness benefits or paid maternity leave (left panel), tax and contribution payers are paying a share of their income into a larger pool of resources from which payouts to eligible beneficiaries are made. Fiscal resources first flow from tax- and contribution-payers to the common pool, and from there back to benefit recipients. If the tax rate is progressive, higher-income individuals pay more into the resource pool than lower-income ones, both in absolute and relative terms. A politically-determined set of eligibility criteria, which can range from means-tested programs to universal benefits, defines who can draw on these resources and whether beneficiaries are also members of the group who contributes to the resource pool (Bradley et al. 2003; Esping-Andersen 1999). In the case of social insurance programs such as unemployment benefits, recipients are also payees since they are only entitled to benefits if they previously contributed to the unemployment insurance system. Redistributive programs such as social assistance, by contrast, may separate beneficiaries from the pool of payees when claimants never held jobs and thus never paid taxes, but still provide benefits based on social rights. The probability of relying on public benefits then varies strongly across individuals and influences how much individuals “pay in” relative
to how much they “get out.” In the model of public social insurance and redistributive policies, costs are spread widely among taxpayers, while benefits are limited to those who are eligible. If new sources of risk arise, policymakers have to raise taxes, contribution levels, or both or finance higher expenditures through deficit spending.

Now consider the case where credit serves social policy functions (right panel). Instead of distributing fiscal resources from taxpayers to benefit recipients through the political system, financial flows are distributed in the form of credit through the financial system, where higher-income individuals accumulate financial wealth by lending their deposits to the rest (see Kumhof, Rancière and Winant 2015). When individuals borrow money, not only do they have to repay the principal, that is the original amount borrowed, but also compensate lenders for their services and the risk they take in the form of interest. Credit is therefore not an insurance since debtors will pay more than the amount they initially borrowed. Instead, credit is an inter-temporal financial obligation that transfers resources from the borrower’s future self into the present through the financial system. Costs and benefits are in most cases targeted and borne by the same actor: the debtor. The only cases in which costs are no longer borne by borrowers are when debtors default and when banks become illiquid or insolvent and need to be bailed-out with taxpayer money. Unlike in the case of public social (insurance) policies, those who rely on credit are not necessarily contributing to the financial system in the form of deposits, nor are they required to do so. A small share of credit is being generated from domestic savings, but increasingly the large majority stems from international capital flows (Passari and Rey 2015; Schularick and Taylor 2012).

Access and Eligibility Rules

Credit and social policies further differ in their access and eligibility rules. The public insurance and redistribution model is based on politically-set eligibility criteria that grant access, define conditions under which claims can be made, and constitute legally enforceable rights. It is the political process that decides, in the famous words of Lasswell (1950), “who gets what, when, and how.” In the financial system, however, it is private lenders that determine “eligibility” and creditworthiness, that is whether individuals can borrow and at

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39 Publicly-funded education or health care systems are an important example of a large overlap between payees and recipients, but here I limit the discussion to income-supporting policies such as unemployment insurance or paid maternity leave.
what cost, according to business considerations. The political and institutional framework only sets broad guidelines, for example to maintain a competitive and fair playing field or to prevent discriminatory behavior. Whereas access to and eligibility for social benefits are politically determined and known ex-ante, the cost of credit varies by household type, for example based on current income, assets ownership, area of residency, and family status, and by broader monetary and macro-economic conditions. Credit can be more expensive for those who might need it the most, for example lower-income or younger households, and less available during economic downturns, for example when unemployment is rising but lending is drying up. Yet households that own assets, in particular property, may enjoy privileged access to parts of the credit market. Asset ownership not only influences the probability of accessing credit and its price but also opens access to a set of financial products that require collateral such as home equity loans or home equity lines of credit. Credit markets, in other words, do not offer equal access to credit and price loans differently, thereby potentially excluding those households from lending markets that would like to borrow to compensate for financial shortfalls. Differential access to and cost of credit undermines the “safety net function” of credit for those individuals and households that previously relied on public social policies but now have to draw on credit markets to address income losses as welfare states’ financial support is shrinking. While the welfare state is built on social rights, credit is not.

Risk Allocation

The welfare state allocates risk and economic responsibility in different ways than credit markets. It provides redistributive functions across income groups, social insurance functions to protect individuals from social and economic risks such as job loss or sickness or to ensure investment in highly specific occupational skills, and social investment functions such as education or childcare. Welfare states “socialize” risks because they shift it from the individual to society—either to all taxpayers or only to those who pay into the insurance pool. Benefits provide a secure stream of financial support and alleviate, to varying degrees, financial constraints. As any insurance program, social policies work counter-cyclical and support individuals financially when their economic circumstances deteriorate. When individuals are drawing on credit as a safety net, however, risk is not transferred to society as

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40 In the case of private lenders, the dominant goal is to maximize profit. In the case of public lenders, government mandates may add different lending criteria such as serving the local economy or disadvantaged societal groups that can overrule profit considerations.

41 Informal lending markets such as payday loans play an increasingly important role in countries like the U.S. or the U.K. (Baradaran 2015; Morduch and Schneider 2017; Servon 2017), but are less important in other countries such as Denmark or Germany. Here I do not take into account payday loan markets.
in the case of public insurance programs, but stay with the borrower and is only deferred to the future. Social insurance is a forward-looking contract, insuring expected risks in the future, whereas borrowing responds to economic risks after they happen. Relying on debt is more than the "privatization of risk" because it does not pool risk among those who pay into a private insurance system as is the case with private health insurance (Hacker 2004) or private unemployment insurance programs. The financial and economic risk of income loss, for example due to unemployment, still rests with prospective borrowers even though they can rely on credit markets to compensate for financial shortfalls. Credit does not transfer risk in the way social policies do, but rather amplifies borrowers' exposure to risk if interest rates change or further income shocks threaten or undermine borrowers' capacity to meet regular debt repayments. Whether taking on debt to bridge income losses will lead to higher economic risk in the future therefore depends on the economic situation of the borrower. Lower-income households are at greater risk of default than higher-income ones since they already devote a larger share of their income to debt payments.

By contrast, social insurance policies are financed through flat-rate or progressive tax- and contribution payments and therefore put a larger fiscal burden on higher-income earners than on lower-income earners. Unless events associated with income losses such as unemployment, sickness, or child birth, are positively related with income, social insurance policies and their funding structures are not "risk-adjusted." While social policies aim to free individuals from markets and protect them from negative outcomes, debt increases individuals' reliance on the market, further constrains individuals' financial situation, and exposes them to new types of risk. Credit markets operate counter-cyclical and provide easy access to credit only in times of economic growth and to individuals who are deemed creditworthy.

*Household Debt, Personal Responsibility, and Support for Social Policies*

When individuals rely on credit to compensate for financial shortfalls, it also shapes their perception of personal responsibility for their own economic and financial well-being and influences their support for social policies.

The welfare state rests on the assumption that individuals are not always responsible for their economic fate, and social policies' eligibility criteria and generosity levels reflect,

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42 Some companies in the U.S. such as the Great American Insurance Company offer private supplemental unemployment insurance that charges a risk premium based on factors that include the state of residence, the beneficiary's industry or sector of work, and current salary in exchange for a share of the pretax salary adjusted for the state's unemployment benefits (see www.incomeassure.com).
in part, shared norms about individuals' discretion over social outcomes.\textsuperscript{43} Public insurance for unemployment and sickness, for example, acknowledges that these events are, to a large degree, beyond individuals' influence.\textsuperscript{44} Increasingly, however, this consensus has been undermined and individuals have to assume more responsibility. For example, defined benefit pension-plans, which guarantee specific amounts of pension benefits upon retirement, are replaced by defined contribution plans, in which the final pension benefits depend on the return of individuals' active investments in pension funds over their working life.\textsuperscript{45} A similar process is happening as an unintended consequence of using credit as a substitute for social policies. It not only shifts economic risk but also economic responsibility from the broad shoulders of society onto smaller shoulders of individuals. Instead of mutual responsibility through society, credit rests on the individual responsibility to repay the debt burden.

When individuals use credit as a private alternative to the welfare state, their support for publicly-funded social policies might decline because debt repayments are rivaling tax payments, because access to credit markets lowers their perceived exposure to economic risks and, consequently, their need for public social policies, or because the personal responsibility that individuals accept by relying on credit instead of social policies makes them less likely to support societal responsibility for other people.\textsuperscript{46} Each of the three channels disperses responsibility, undermines social solidarity, and further exacerbates the "risk shift" already underway in many countries (Hacker 2008). The growing reliance on credit markets to fill financial gaps or finance expenses can strengthen societal groups that strongly support pro-credit policies, particularly tax incentives for debt, and oppose tax-funded social policies, thereby creating strong feedback loops that solidify the position of credit to replace social policies.

I therefore hypothesize that, first, individuals who draw on credit as a private alternative to welfare states become less supportive of tax-funded social policies. Second, I expect that individuals who are in a weaker socio-economic position and take on more debt to fill

\textsuperscript{43}On the relative importance of luck versus personal responsibility for social outcomes and its influence on social policy choices and preferences see Bénabou and Tirole (2006); on the role of deservingness in the welfare state context see Katz (2013); Larsen (2013).

\textsuperscript{44}Some countries pay unemployment benefits in cases where the employee herself quit, while other countries restrict access to benefit to cases where the employees have been laid off.

\textsuperscript{45}These changes have occurred in many countries, but gone furthest in the U.S. and the U.K. and inspired some observers to label the U.S. a "portfolio society" (Davis 2009, p. 193).

\textsuperscript{46}Research has shown that higher realized or perceived labor market risk is associated with higher support for redistribution and social insurance programs (Cusack, Iversen and Rehm 2006; Hacker, Rehm and Schlesinger 2013). Relatedly, Ansell (2014) shows that rising house prices reduce demand for redistribution and social insurance programs because they increase homeowners' ability to draw on the growing value of their home as a form of self-insurance.
financial gaps are more likely to experience economic insecurity. In chapter 6, I draw on original cross-national survey data as well as panel data to test these hypotheses and their empirical implications on social stratification, economic insecurity, and public support for the welfare state.
Chapter 2
The Mismatch Between Households’ Financial Needs and Welfare States’ Financial Support

“The times in which we live and work are changing dramatically. The workers of our parents’ generation typically had one job, one skill, one career—often with one company that provided health care and a pension [...] Today, workers change jobs, even careers, many times during their lives.”

— George W. Bush, Republican National Convention, 2004

In 2004, President George W. Bush identified what in his view has become one of the dominant sources of anxiety among employees in the United States and other OECD countries—job insecurity. In the Fordist economies of the 1970s, stable, long-term employment was the norm. This is no longer the reality for many individuals. Employment patterns have become more disrupted due to shorter but more frequent unemployment spells, temporary jobs with limited if any benefits, fluctuating work hours, or job-to-job switches with changing earnings.

Bush’s diagnosis, however, glanced over two other crucial trends that further contributed to growing economic and financial insecurity. First, the instability of individuals’ employment patterns is only one side of broader shifts from Fordist economies to more flexible knowledge economies as fragmentation and disruption stretch all the way into life-course trajectories of individuals and their families. The old single-breadwinner family model broke down and dual-earner couples and single parents became more common as women’s participation in the labor market grew steadily. Labor market insecurity can also be driven by individuals’ deliberate choices to temporarily leave the labor market to care for children or elderly or to get training and further education (Blossfeld and Hakim 1997; Marshall et al. 2001). For some, the flexibility of the modern knowledge economy is a boon: high-skilled workers harness the opportunities of new employment opportunities, take time off work to travel, care for children, or get more training. Yet for others, the flexibility of modern labor markets,
the growing demands on skill requirements, or the challenges of balancing work and family obligations are a burden.

Second, what turns fragmentation and disruption of employment patterns and life-course trajectories into risk are the financial consequences of the shift from Fordist economies to knowledge economies in light of incomplete and often inadequate welfare states (see also Hacker 2008). Welfare states and their net of social policy programs, ranging from unemployment insurance to childcare support, are key pillars of financial support for households. Increasingly though, welfare states are at odds with households’ employment patterns and life-course choices and provide incomplete support, both in-cash through government transfers but also in-kind through social services. Retrenchment has been the most visible change to welfare states and social policies. But it would be deeply misleading to think of this as only a story about cuts in benefits and eligibility. It also has to with policymakers’ failure to actively adapt existing programs to new realities or to introduce new programs to meet changing demands. This policy drift is less visible but equally if not more consequential because put more of the financial burden onto the shoulders of households. Parental leave policies are a case in point. While some countries, most notably the Nordics, have gone furthest in providing financial as well as in-kind support for new parents, other countries like the U.S. have little to no public programs.

The combination of fragmented and disrupted employment patterns and life-course trajectories on the one hand and retrenchment and policy drift in the domain of welfare states on the other results in a mismatch between households’ financial needs and social policy’s financial support, a situation I call a social policy shortfall. To stem volatile incomes and finance expenditures, households increasingly borrow money to pay for social services. Credit markets have become a private alternative to public social programs to address social risks and harness social opportunity.

In this chapter, I document how the fundamental transformation of Fordist economies into knowledge economies has affected households’ employment patterns and life-course trajectories across countries and to what extent social policies address resulting financial needs. I focus on social policy shortfalls in two important domains: the first one is about disruptions in labor markets and employment patterns that result in involuntary income losses, for example unemployment. The second domain concerns disruptions in life-course trajectories that result in voluntary or deliberate income losses, for example, time off work to care for children. The first part of this chapter describes broader trends toward fragmentation and disruption in employment patterns and life-course trajectories with a focus on Denmark,
the United States, and Germany. The second part develops a measure of the social policy shortfall based on income fluctuations in gross, “pre-government” income and net, “post-government” income. The difference between gross and net income volatility reflects the ability of welfare state through taxation and government transfers to soak up income losses when individuals leave the workforce.

2.1 Labor Markets and Social Insurance Policies

The similarities between a janitor in a large company in the U.S. today and a couple of decades ago often go no further than the title of their job and the hourly wage. For Gail Evans, a janitor at Kodak in the 1970s, the inflation-adjusted hourly pay was about the same as Marta Ramos’, who works as a janitor at Apple today. But this is where the similarities end. As the New York Times recently reported, Gail Evans was a full-time employee with over four weeks of paid vacation per year, tuition assistance for part-time college, and bonus pay. Even when the facility she worked in was shut down, Kodak retrained her to cut film. Contrast this to Marta Ramos, the janitor at Apple, who was hired by Apple as a contractor with essentially no benefits. She has no paid vacation days and does not take any unpaid days off because she needs her wage income. Part-time educational opportunities, retraining, or in-house promotions like in the case of Kodak are not available.1 While the changing nature of work is one source of financial insecurity, incomplete welfare states is another.

2.1.1 Disrupted Employment Patterns

The transformation from Fordist production regimes to knowledge economies since the late-1970s has changed labor markets, making individuals’ employment patterns increasingly temporary, disrupted, and unstable. In other countries, these trends are less pronounced than in the U.S., but workers across the OECD still feel the consequences. There are a few trends that contribute to employment instability. Among the key drivers toward the new knowledge economy was the decline of manufacturing and the rise of the service industry. Manufacturing had provided relatively stable jobs for low-skilled, blue collar workers. Yet new jobs for low-skilled workers in the service sector tend to be less stable and often poorly paid. The growth of the service sector went along with a decline of union power to negotiate traditional job arrangements (Wallerstein and Western 2000). Overall, the workplace has

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1The New York Times, “To Understand Rising Inequality, Consider the Janitors at Two Top Companies, Then and Now,” September 3, 2017
become increasingly "fissured" (Weil 2014) as firms outsource larger shares of their production and construct extensive networks of subcontracting and franchising that allow them to streamline operations and cut costs, in particular labor costs. Second, as international trade is gluing economies together, firms face growing foreign competition and further pressures to cut costs. Downsizing and cutting wages and work hours were the primary tools, but technological change, most notably automation, provided firms with new opportunities to replace workers and demand more flexibility. Finally, the turn from stakeholder to shareholder models of corporate governance shifted the power from managers to shareholders and the focus from long-term interests such as stable firm-worker relationships to short-term considerations such as stock prices.

Together, these trends have reduced employment stability, made labor markets more volatile and selective, and made transitions into and out of employment more frequent and protracted (Schmid 2002). Non-standard work, including temporary work, contractors, and part-time employment, as well as shorter and fluctuating work hours, have become the new reality for many workers. These trends, however, are not uniform across countries and affect different types of workers within countries. Employment tenure rates and degrees of labor market fluidity have diverged considerably between Germany on the one hand and Denmark and the U.S. on the other. Figure 2.1 shows that employment stability has increased since the mid-1990s for a significant share of German employees. The share of employees who

![Figure 2.1: Share of Employees with Long-Term Employment Tenure](image)

*Notes:* Share of employees ages 25-54 with employment tenure of ten years or longer. Employment tenure is measured by the length of time workers have been working with their current employers. *Source:* OECD Labor Force Statistics (2017).

had been working for their current employer for ten years or longer had climbed from just
over a third in 1995 to a peak of almost 45% in the mid-2000s. By contrast, in Denmark that number has fallen over the same period from a third to around 25%, while long-term employment in the U.S. stagnated at around 27%. These low rates of long-term employment are mirrored in higher rates of labor turnover, or churning rates, among those with tenure of less than one year as shown in Figure 2.2. Labor mobility is much higher in Denmark and the U.S., where in 2011 around one-fifth of workers lost their jobs within one year, compared to Germany, where only 15% of workers remained in their job for less than a year. But these aggregate figures mask considerable variation across individuals. In Denmark and Germany, high-skilled individuals fare much better than low-skilled individuals, but the skill divergence is especially pronounced in Germany.

Labor market fluctuation rates, a measure of short-term labor market mobility, show that Germany has relatively low and steady levels of turnover of around 30%. In Denmark, turnover was already over 40% in the early 1990s and increased to over 50% by the late-2000s.
The divergence in employment stability reflects, in part, the more flexible and deregulated labor markets of Denmark and the U.S. with weak employment protection. This is especially true for temporary workers as indicated by Figure 2.3. The flipside of high labor market fluidity is, in many cases, shorter unemployment spells. During the last few decades, unemployment, one of the biggest economic and financial risks for employees, also changed its nature. Under Fordism, unemployment was considered a cyclical response to swings in the business cycle. Workers lost their jobs when business was slow but got rehired or found a new job when production took off again. With the economic crisis of the 1970s, however, unemployment no longer was a temporary phenomenon but became a persistent, long-term, and structural problem. While cyclical unemployment brought temporary disruptions in employment and earnings that could be mitigated with social insurance programs such as unemployment insurance, structural unemployment is much harder to address with existing programs and overcoming it might require additional steps such as retraining and relocation. The German labor market, more than any other, was and to certain degrees still is plagued by long-term unemployment, whereas the more flexible labor markets of Denmark and the U.S. tend to move unemployed workers into new employment at much higher rates.

Notes: The index measures the procedures and costs involved in dismissing individuals or groups of workers and the procedures involved in hiring workers on fixed-term or temporary work agency contracts. Higher values indicate stronger employment protection. The score for regular and fix-term contracts in the U.S. are almost same (0.256 and 0.25, respectively) and thus overlapping. Source: OECD Employment Database (2017).

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2 Rhein (2010) calculates the labor market fluctuation rate as the sum of the number of newly-recruited employees who have been employed at their establishment for less than a year and the number of employees who have left the establishment where they were employed a year before in the course of the last 12 months, divided by the average total number of employees in a given year.
as shown in Figure 2.4. The U.S. stands out with a high fraction of unemployed individuals experiencing very short unemployment spells. During the 1980s and 1990s, an average of 30 percent of spells lasted between one and three months. While unemployment has always been a short-term phenomenon, long-term unemployment has become a more widespread problem in the aftermath of the financial crisis. In Germany, by contrast, the share of long-term unemployed individuals has almost doubled during the 1990s and early 2000s and the share of shorter-term spells is also growing. In the mid-2000s, more than half of all unemployed individuals in Germany were long-term unemployed (that is unemployed for more than one year). In Denmark, unemployed individuals experience increasingly shorter spells, particularly since the mid-1990s. By the late 2000s, the distribution of unemployment spells had begun to resemble the distribution of the U.S. The German case shows that strong employment protection can not only discourage firing but also hiring, thus amplifying division between protected insiders with long-term job tenures and exposed outsiders who find it much harder to (re-)enter the labor market.

As economies shifted from Fordism to modern knowledge economies, “new social risks” emerged in the form of growing instability of employment, the rise of non-standard work, and greater prevalence of short-term as well as long-term unemployment spells. What all of these risks have in common is that they lead to growing volatility of earnings.
2.1.2 The Decline of Social Insurance Policies

When employment is disrupted, for example through unemployment or sickness, one of the most important sources of financial support comes from welfare states and various types of social insurance programs. These policies are often referred to as social consumption policies because their main goal is to help individuals maintain their income. Welfare states' capacity to address and mitigate economic and financial risks of their citizens and their potential to adjust to new economic circumstances differ across countries. Esping-Andersen's typology of welfare regimes based on shared institutional complementarities and comparative institutional advantages remains one of the most influential frameworks to understand the logic of different social policy designs and their durability through time (Esping-Andersen 1990, 1999).3 Liberal welfare regimes such as the U.S. or the U.K. share a very narrow definition of eligibility and a limited definition of "social risk" and emphasize private market-based solutions over publicly-provided benefits. They offer modest means-tested benefits and targeted social assistance and rely on a combination of public and private insurance schemes that are often "hidden" in various de-facto welfare programs such as the earned-income tax credit (EITC) in the U.S. and other subsidized programs (Howard 1997). Social democratic welfare regimes, often associated with the Nordic countries, are based on the logic of universalism and egalitarianism in which eligibility is determined by citizenship. Most risks are socialized and addressed through generous benefits, which marginalizes the role of needs-based assistance, while other social policies such as active labor market policies aim to increase the employability of individuals. The third group consists of conservative welfare regimes, typically found in continental Europe. These are characterized by status segmentation that privilege long-term employees and civil servants as well as familialism that privileges the single, often male breadwinner model where parents, in most cases the wife, are responsible for childcare. Private markets for welfare provision are discouraged, although under the impact of fiscal pressures private solutions have made inroads even in these regimes. Unlike social democratic regimes, the conservative welfare regimes aim at passive employment management through generous unemployment insurance and early retirement schemes (Palier 2010).

Social consumption policies firmly rest on a clear separation of life phases, namely childhood, education, employment, and retirement, a single-breadwinner model with strict separation of roles of men and women within the nuclear family, and uninterrupted careers

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3For debates around this typology see, for example, Patrick Emmenegger et al. (2015) and the other contributions in this special issue.
of full-time work. But with employment stability crumbling, the nature of jobs changing, and non-standard forms of work on the rise, the reach and adequacy of traditional income-maintaining social consumption policies have been called into question. In many cases, welfare states are increasingly at odds with new employment patterns in the knowledge economy. The reasons for this mismatch are two-fold. First, deliberate cuts and retrenchment of benefit amounts and duration periods have lowered levels of financial support, while tighter eligibility criteria exclude a growing share of individuals that in the past were dependent on welfare benefits. Individuals in non-standard forms of employment, with fewer and fluctuating work hours, and more frequent job switches can more easily fall through the cracks of the safety net if they do not meet these eligibility criteria. Means-tested programs, already more common in liberal market economies, have grown in other welfare states as well, for example in Germany where earnings-related unemployment benefits were replaced with means-tested flat-rate benefits in 2005. These restrictions made more individuals ineligible for benefits and further weaken their financial situation. Second, policymakers have often failed to adapt existing programs to changing circumstances, leading to forms of policy drift and a growing mismatch between welfare programs and employment realities (Hacker 2004; Thelen 2004). As social consumption policies were scaled back, many OECD countries have instead begun to focus on social investment policies. As I will explain in more detail below, these are future-oriented supply-side policies that aim to increase productivity by investing in education, active labor market programs that emphasize retraining and employability, and family policies that provide financial support for periods of leave and childcare.4

The combination of disrupted work patterns and rising employment instability one the one hand and declining scope and breadth of social policy programs on the other lead to incomplete financial support from the welfare state. In some cases, new types of risk have emerged that are not addressed by social policies at all. Fluctuating earnings or job switches with pay losses are two examples where traditional insurance programs fail.

The preceding discussion has already indicated that the intensity of these trends and the degree of mismatch between individuals' employment patterns and welfare states' financial support vary across countries. In the following section, I discuss in greater detail the developments in Denmark, the U.S., and Germany—each country representing one of Esping-Andersen's welfare regime types—as well as the reasons behind these diverging trends.

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4On the distinction between social consumption and social investment policies see, for example, Ansell and Gingrich (2015); Hemerijck (2013); Morel, Palier and Palme (2012) and the contributions in Beramendi et al. (2015).
2.1.3 Country Cases

Employment Patterns and Social Policies in Denmark

The key distinguishing feature of the Danish labor market, which is structured by strong labor movements, powerful business association, and a coordinated collective bargaining system, is the so-called “flexicurity” system. It combines weak employment protection, a generous unemployment insurance system, and active labor market policies aimed at continuous training and education as well as employability and retraining to equip individuals with the necessary skills for new jobs (see Andersen and Svarer 2007; Emmenegger 2010; Madsen 2006).\(^5\) The flexibility of the Danish labor market dates back to the 19th century, where the “September Agreement” of 1899 already enshrined managerial prerogatives and gave managers a large degree of freedom in hiring and firing in exchange for employees’ rights to organize into trade unions (Einhorn and Logue 2003). These early corporatist structures endure until today and give the economy great adjustment potential. Wage coordination policies were given up in 1993 and since then, negotiations have become more and more decentralized. High union density and relatively strong labor and employer organizations as well as high coverage of workers through collective agreements ensure that workers are in a much better position to have their demands heard than in the U.S., where unions lost most of their power. The industrial partners contribute to social investment by solving collective action problem and negotiating pensions, leave arrangements, education and training such as apprenticeships, as well as other welfare benefits with insurance companies (Andersen, Dølvik and Ibsen 2014).\(^6\)

Weak employment protection results in high rates of job turnover and more frequent but often short-term spells of unemployment. Estimates suggest that even in years with low unemployment rates, about 20% of all workers experience at least one spell of unemployment per year (Eriksson and Westergaard-Nielsen 2007). The majority of unemployed individuals find new employment or enroll in training within six months. Long-term unemployment, by contrast, is a much smaller problem than in many continental European welfare states and has declined steadily since the 1990s. These trends were only interrupted in the aftermath of the financial crisis of 2007. Yet labor market turnover and labor mobility are, together

\(^5\)In Denmark, dismissal regulations have always been part of collective agreements. When Danish trade unions tried to introduce more restrictions on managerial decision to hire and fire at will, weak societal pressure for more regulation and fragmented social-democratic governments prevented political action and left bargaining about job protection at the corporatist level and ultimately hindered stricter regulations against the will of employers (Emmenegger 2010).

\(^6\)See also Ibsen and Thelen (2017).
with the U.S., one of the highest in the OECD. This is not necessarily limited to low-skilled individuals as in Germany, but also affects higher-skilled ones (see Figure 2.2).

In response to the economic and employment crisis of the 1970s, Denmark and other Nordic countries expanded public employment and began to plant the seeds for policies that later turned into fully-fledged activation programs. These policies aimed to increase the productivity of workers and employability of those out of work by providing help with job search, training, and financial support (Bonoli 2013, ch. 5). Unlike the U.S. and increasingly Germany, the Danish economy has not turned to low-quality and low-wage jobs, albeit the numbers have increased slightly (Westergaard-Nielsen 2008). During the 1990s, less than ten percent of jobs were considered low-pay, measured as the share of employees whose hourly earnings were less than two-thirds of median hourly earnings. That number has increased slightly during the 2000s to about 12% but is considerably lower than in Germany and half the rate of the U.S. as shown in Figure 2.5. Among those in low-wage jobs are mostly young people, women, ethnic minorities, and migrant workers (Mailand and Larsen 2011).

Traditionally, only a relatively small share of employees held temporary contracts, mostly because the regulation of dismissals was very liberal to begin with. In recent years, temporary agency work, and part-time jobs, including marginal part-time work, have become more common. In 2010, one-fourth of the labor force worked part-time. One-third of employees, mostly women, opt for part-time work to reconcile family obligations. Involuntary part-time work among men has almost doubled between the early 1990s and 2010 to around

Figure 2.5: Share of Employees in Low-Pay Jobs

![Graph showing the share of employees in low-pay jobs for Denmark, USA, and Germany from 1995 to 2015.](image)

Notes: The figure shows the share of employees working in low-pay jobs. Low pay is defined as hourly earnings that are less than two-thirds of median hourly earnings. Source: ILO Statistical Database (2017).
15%. Among women, that number has remained unchanged (Mailand and Larsen 2011). In 2011, around 28% of the Danish workforce had employment contracts that no longer reflect the traditional permanent full-time position. Almost 80% of temporary worker are covered by collective agreements. Yet Denmark has a special unemployment benefit for part-time workers that requires a shorter contribution periods than for standard employees with regular contracts (34 weeks instead of 52 over the previous three years) but with only two-thirds of the standard benefits. Since most social benefits, including healthcare, are universal, all Danish citizens, including those working in non-standard or even precarious types of jobs, enjoy full health care coverage, free medical care, and old age and invalidity pensions. Occupational pension schemes are an important additional pillar of old age social security, but employees with few weekly working hours and short-term contracts are excluded from occupational pension schemes and only receive reduced pensions.

A key element of the Danish flexicurity model is the relatively generous welfare state that mitigates high economics risks that emanate from the weak employment protection in a flexible labor market. The unemployment insurance system, the most important financial safety net in times of job loss, is voluntary and used to cover around 90% of the workforce, but this number has declined to around 72% in recent years. To be eligible for unemployment benefits, claimants have to have worked at least 52 weeks during the last three years. Unemployment benefits are set at around 90% of the previous wage but capped at relatively low levels (DKK 4,180 per week (approx. $627) in 2016). During the period of unemployment, active labor market policies require unemployed individuals who have not found a new job after one year to participate in “activation” programs, which entail public employment programs, training and education programs, or subsidized employment schemes. Once unemployment benefits are exhausted, individuals are eligible for social assistance at a much lower rate. Individuals without unemployment insurance receive social assistance as soon as they become unemployed. With a high replacement rate for lower-income individuals, UI insurance funds tend to favor those employed in low-wage jobs.

From the late 1990s to the early 2000s, governments have moved the unemployment insurance system from passive income maintenance toward activation and a focus on employability. Various reforms have cut benefit amounts and reduced the maximum duration of unemployment benefits from five years in 1996 to four in 1998 and now two years in 2010.

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8Access to pensions depends on the claimant living permanently in Denmark and having lived in Denmark for at least three years between the ages of 15 and 65.
9The remaining share of the workforce typically works in jobs with de-facto very high employment protection and long tenure rates or, more recently, has taken up private supplementary insurance.
making access to benefits and staying in the unemployment insurance system more difficult (Albæk 2008). The average unemployment replacement rate has dropped from an average of 88% in the 1970s to an average of 61% in the 2000s.\textsuperscript{10} Policymakers have also sought to discourage social assistance recipiency by cutting benefits. The general trend has been toward risk control of the poor and risk management of the middle class through activation policies and market solutions that aim to increase employability and labor market participation instead of providing income maintenance. As the Danish finance minister Bjarne Corydon remarked on August 24, 2013: “I believe in the competition state as the modern welfare state.”\textsuperscript{11} These policy changes also shifted responsibility for addressing risk and harnessing opportunities away from the government (and society) onto the shoulders of individuals, often at the expense of collective labor market agreements that left already vulnerable groups in society even less protected than before (Abrahamson 2015; Andrade 2015).

\textit{Employment Patterns and Social Policies in the United States}

In the U.S., the turn toward a knowledge economy has far-reaching consequences on the type of employment and the nature of jobs. Compared to other OECD countries, the decline in employment stability and the rise of earnings instability had gone furthest in the U.S. Weak employment protection and a flexible labor market allow employers to adjust relatively easily to changing domestic and international economic conditions. One of the consequences is that long-term employment (that is ten years or more), an important pillar of the Fordist economy and one of the key operating assumptions behind many welfare policies, has fallen among men age 35 to 64, it dropped from about 50% in 1973 to 37% in 2008. The share of women of the same age in long-term employment remained fairly stable at around 30% between 1973 and 2008 (Farber 2010). OECD data, only available since the early 1990s, indicate a decline among all workers from 27% in 1996 to 24% in 2014.

As long-term employment declines, non-standard work is on the rise. Irregular work hours and interrupted employment schedules have become more common in the U.S. and have increased earnings volatility through changes in hourly earnings or through more frequent income losses due to unemployment (see, for example, Eichhorst and Marx 2016; Golden 2015; Morduch and Schneider 2017). Individuals who are employed in these non-standard forms of work often fail to meet eligibility criteria for (traditional) social programs such as unemployment insurance or EITC, which further amplifies the financial consequences of this

\textsuperscript{10}Own calculations based on the Comparative Welfare Entitlements Dataset 2 (Scruggs 2014).

\textsuperscript{11}Quoted in Abrahamson (2015), p. 35.
type of work (see McHugh and Kimball 2015). Among hourly-paid part-time workers, over 83% report having unstable work schedules (Ruan and Reichman 2014). Most of these non-standard jobs not only offer less job security but also lower pay and fewer benefits (Autor and Houseman 2010).

For many American workers, the new employment reality is a combination of low-quality jobs with limited or no benefits and growing instability of employment and earnings. This is particularly pronounced among private-sector employees and men. Short-term job instability and outright job loss has increased for low-skilled individuals, especially men, but more recently also among higher-skilled men.\textsuperscript{12} It is noteworthy that temporary or contract work is relatively rare compared to other European countries, but it would be misleading to perceive this as a sign of employment stability. Quite to the contrary, since the weak protection of regular and temporary contracts and the employment-at-will doctrine allows employers to liberally hire but also fire employees, thereby obviating the need for temporary contracts. Labor market policies have contributed to the changing employment landscape by promoting workfare or welfare-to-work approaches, aimed to reduce welfare dependency by helping welfare recipients gain employment through support service and various, often punitive, work requirements. This approach fundamentally shifted responsibility for supporting oneself during periods of joblessness and finding new work from the state to the individual (Quade, O'Leary and Dupper 2008).

The U.S. and Denmark are typically classified as different types of political economies—a liberal market economy and a Nordic Social Democratic economy (Esping-Andersen 1990; Hall and Soskice 2001). Despite their different institutional configurations, both countries share similarly flexible labor markets with weak employment protection and high labor market turnover. But while the Danish welfare state protects its citizens from the vagaries of markets, the American welfare state addresses social risks such as unemployment or sickness to much smaller degrees than the Danish welfare state. Disrupted employment patterns, including unemployment, non-standard work, and fluctuating work hours, lead to larger social policy shortfalls and therefore pose a significant financial burden to many American households.

The U.S. welfare state and its social consumption policies are characterized by a set of unique features that set it apart from its European counterparts. First, it relies to an exceptional degree on private markets and public-private partnerships to provide social services. Guided by ideological predispositions about the superiority of markets and supported by

\textsuperscript{12}There is still debate over the exact numbers and ways to measure employment (in-)stability. For an overview of the current debate see, for example, Hollister (2011).
considerable direct and indirect public interventions to create and sustain these markets, the private dimension of its welfare state stretches from childcare and healthcare over vocational training and education to housing and pensions. A larger share of policy programs is therefore “delegated” to private actors (Morgan and Campbell 2011) or, if still in the hand of the government, “hidden” and less visible, most notably through tax expenditures such as the Earned Income Tax Credit (Howard 1997). The result is a “submerged” welfare state (Mettler 2011). Second, unlike the Nordic countries where despite change most social programs are still universal, inclusive, and based on citizenship rights, the US welfare state operates under a logic of deservingness and personal responsibility. Restrictive eligibility criteria aim to deliberately exclude those deemed “undeserving” from public social benefits. Those include individuals who are perceived to be idle and “not working hard,” non-citizens and immigrants, or those without a steady contribution history. This often leads to strong stigmatization of welfare recipients (Soss and Schram 2007). Finally, the US welfare state has a strong bias toward the elderly who are an active and well-organized electoral group. The improvements and expansion of the elderly’s access to social services have mostly come at the expense of support for working-age adults and children (Lynch 2014).

Regional differences and overlapping jurisdiction contribute to widely different coverage and reach of social policy programs, large programmatic diversity, and diverging social outcomes across states and locality. Within the boundaries of the national unemployment insurance system, every state operates its own distinct unemployment insurance scheme. In most states, basic unemployment insurance provides beneficiaries with an average replacement rate of around 50% (with a cap) of their prior earnings for up to 26 weeks.\textsuperscript{13} Eligibility criteria are comparatively restrictive, granting benefits only to individuals who have lost their job through no fault of their own, are able to work and actively seeking it, and have paid into the unemployment system for a certain period of time. Individuals who quit their job voluntarily are not eligible for UI. States have significant room to set their own benefit levels and apply these eligibility criteria within federally-defined boundaries. Overall, replacement rates are lower and benefit duration periods much shorter in the U.S. than in other comparable OECD countries (Woodbury 2014). But the already weaker financial position of unemployed individuals is aggravated by the fact that the share of unemployed individuals who actually receive unemployment benefits is much lower than in most European welfare states. During the early 1980s, the recipiency rate had declined and reached its low of 25%.

\textsuperscript{13}In exceptional circumstances of a strong increase in the unemployment rate, for example due an economic shock, the permanent extended benefits program (EB) provides additional unemployment benefits, ranging between 13 and 20 weeks for individuals who have exhausted their regular benefits.
followed by a slow increase in the share of recipients to 40% in 2000 and another sharp decline to 23% in 2014. Recipiency rates also vary dramatically across states, ranging from 66% in New Jersey to 15% in South Carolina in 2014 (McHugh and Kimball 2015). Key factors for declining recipiency rates are more restrictive eligibility criteria and cuts in benefit, increases in taxation on benefits that reduce the incentives to file for UI benefits, and the decline of unionization (McHugh and Kimball 2015; Vroman 2011; Wittenburg et al. 1999).

When President Clinton enacted the “Personal Responsibility and Work Opportunity Reconciliation Act” (PRWORA) in 1996, the social policy landscape changed considerably. PRWORA discontinued individual entitlements to welfare benefits and transformed the federal matching grant program Aid for Dependence Children (AFDC) into Temporary Assistance for Needy Families (TANF), a federal block grant program. These programs have lifetime limits for overall benefit receipts and emphasize activation or workfare through strict work and training requirements (Quade, O’Leary and Dupper 2008). President Bush’s “entitlement reform” sought to further expand the workfare approach by promoting two governing ideologies of “compassionate conservatism”—the idea that social welfare functions should be in the hands of private sector and other non-governmental organization—and “ownership society”—the focus on personal ownership and assets rather than collective social policies as foundation of economic security and prosperity (Béland and Waddan 2008).

Changes in social policies have not always taken the form of visible revision like cuts and retrenchment. In many cases, the government’s failure and its inaction to adapt and update policies to a changing environment lead to a slow-moving and less visible decline of scope, depth, and coverage of public programs—a process that Hacker (2004) termed “policy drift.” He identified health insurance and retirement security as the two domains that were most affected by policy drift, but social insurance programs and the social safety net have similarly become at odds with the rise of disrupted employment patterns, non-standard work, and shorter and fluctuating work hours (Hacker 2008). Since the workfare approach ties many benefits to employment (e.g. tax expenditures or health insurance) and social insurance contribution (e.g. unemployment insurance and social security), the economic risks and financial consequences of job loss are amplified and much greater compared to other OECD countries. For example, in almost all European countries, health insurance is independent of one’s employment status. The Nordic countries offer social assistance based on citizenship, while even the conservative welfare regimes of continental Europe provide financial support regardless of employment history. In the U.S., by contrast, the risk of job loss spreads into other domains and amplifies financial insecurity. Households may face
large out-of-pocket medical expenses when they lose their health insurance or suddenly fall in arrears with their debt repayment schedule when earnings drop and government transfer are insufficient or run out. This form of risk contagion increases financial insecurity for large parts of American society.

Employment Patterns and Social Policies in Germany

In Germany, the segmentation of the labor market into a core of protected employees, mostly working in manufacturing jobs, and a growing labor market periphery with atypical and non-standard jobs, has been further amplified by structural changes from Fordism toward a knowledge economy. These dualization trends are more pronounced in Germany and the rest of continental Europe than in the Nordic countries, which some have attributed to the stronger political grip of Social Democratic parties in the Nordics (see, for example, Pontusson 2011).14

The core of the German economy still depends on “diversified quality production,” a regime where durable and reliable products, sold based on superior, intrinsic values rather than mass production, are produced and assembled in non-routine ways (see Sorge and Streeck 2016; Streeck 1991). This regime requires an institutional eco-system of vocational training systems that provide a highly-skilled workforce, organizational capacities that focus on quality rather than short-term profit, and social peace between management and workers. In response to the economic crisis of the 1970s, the government adopted a two-pronged strategy that would strengthen and ultimately solidify a dualized labor market. To protect the competitiveness of the core manufacturing economy, the government sought to reduce labor supply in industrial sectors through early retirement programs and to increase the productivity and employability of peripheral sectors through more flexibility in labor regulation. This strategy created a closed internal labor market with a core of protected workers with long-term employment as well as a secondary peripheral, much more deregulated and flexible labor market with a growing share of non-standard and atypical jobs (Eichhorst and Tobsch 2015; Palier and Thelen 2010). As a consequence, atypical jobs have grown steadily since the 1970s, with lower pay and weaker benefits than employees with regular contracts (Bleses and Seeleib-Kaiser 2004).

Activation policies slowly entered the German labor market with the Employment Promotion Act of 1969, which began to shift public expenditure from social consumption to social investment, but took off only decades later. A major reform in 1996 laid the groundwork

14On labor market dualization see, among others, Emmenegger (2012); Palier (2010); Rueda (2007).
for retrenchment measures that reduced long-term unemployment benefits and introduced stricter availability and job search requirements. Despite these tentative steps toward more activation policies, the German economy throughout the 1980s and 1990s was characterized by high rates of long-term unemployment (see Figure 2.4 above) and only modest labor force participation, mostly because of women stayed out of the labor market.

The most comprehensive push toward activation and more personal responsibility came under the Social-Democratic/Green government of Chancellor Schröder. Under the rubric of “för dern und fordern” (support and require), the Job Active Act of 2001 implemented profiling of unemployed individuals and much stricter monitoring of their job search endeavors. With the Agenda 2010 and the Hartz labor market reforms laws, the government introduced the biggest labor market and social policy reform in postwar Germany. Compared to other OECD countries, the turn toward activation policies came relatively late. At the heart of the reform was a set of laws whose goal was to open up the inflexible and rigid labor market, thereby addressing long-term structural unemployment and stagnating economic growth (Dustmann et al. 2014). The Hartz legislation created so-called Mini- and Midi jobs as new types of marginal employment with low or gradually-rising taxes and insurance payments. Mini-jobs are forms of short-term marginal employment with pay below €450 per month. These jobs are exempt from tax and social insurance contributions and employees only get limited unemployment benefits and are not entitled to pension claims. Midi-jobs allow earnings between €450 and €850 per month and have reduced social insurance contributions. These new types of jobs led to a substantial increase in non-standard, often temporary work with low pay and further exacerbated the dualization of the German labor market. Overall, the Agenda 2010 was a combination of labor market flexibility to create more jobs, particularly in the service sector, active labor market policies to improve employability, and stricter social policies to reduce welfare dependency. Employment risk shifted from employers to employees that are exposed to a much more flexible labor market with lower pay and fewer social benefits (Eichhorst and Tobsch 2015).

As policies shifted toward activation and introduced more labor market flexibility, tensions emerged with the conservative and status-preserving elements of the welfare state. The German conservative Christian-Democratic welfare regime is built on large and fragmented social insurance system that maintains both status and income and is based on the 'equivalence principle,' which states that social insurance benefits should be commensurate to insurance contributions made during employment periods. “Hartz IV,” the fourth and

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15 For an overview of the reform package and its impact on labor market outcomes see, for example, Eichhorst, Kaufmann and Konle-Seidl (2008); Jacobi and Kluve (2006); Krebs and Scheffel (2013).
most consequential social policy law of the Hartz labor market laws, proved particularly
disruptive to the tradition German welfare system. It introduced a set of activation pol-
ices for unemployed individuals and replaced earnings-related unemployment benefits with
a means-tested flat-rate unemployment benefit scheme. Before the Hartz reforms, benefits
for unemployment insurance and unemployment assistance were related to prior income af-
ter taxes and supplemented for dependent children. Individuals were eligible for benefits if
they paid contributions for 52 week during the last three years. The duration of benefits
ranged from 12 to 32 months depending on age and past employment tenure. Those who
have exhausted unemployment benefits could draw on long-term unemployment assistance,
whereas those who fell below a certain income threshold were eligible for social assistance
which guaranteed minimum income support. As of January 1st, 2005, the reform combined
unemployment assistance and social assistance into a single jobseeker allowance program
with replacement rates between 60% and 67% of prior earnings net of tax and social security
contributions but a relatively high monthly income threshold (€5,950 (West-Germany) and
€5,000 (East-Germany)).

Moreover, the Hartz IV reform law merged long-term unemployment and social assis-
tance, considerably reduced the amount and duration of unemployment benefits, and in-
troduced stricter eligibility criteria. Long-term unemployment benefits are now no longer
dependent on prior earnings and instead consist of a flat-rate benefit payment (€345 in West-
Germany and €331 in East-Germany in 2005) with additional benefits for dependent spouses
and children and subsidies for rent and heating. This created a steep loss in unemployment
benefits, particularly among higher-income earners who had received higher unemployment
benefits under the old system. With more than half of all unemployed individuals out of
the labor force for over a year in 2004 (one of the highest rates in the OECD), the reform
affected a sizable share of individuals who were unemployed at that time and sparked fierce
resistance in German society.16

16 For newspaper coverage of the Hartz IV law, see “German labour-market reform: Hartz and minds,” The
2.2 Life-Course Trajectories and Social Investment Policies

As employment patterns became more disrupted since the late 1970s, a second trend was underway. The life-course trajectories of individuals and their families also became less stable and orderly and more flexible and fragmented (Brückner and Mayer 2005; Mayer 2009). By life-course trajectories—a concept borrowed from sociology—I mean individuals’ movement through various stages of life, from raising children, education and training, employment, and retirement and care for elderly. New forms of life-course trajectories are the result of (mostly) deliberate choices about such life-course trajectories, including decisions about family structures, whether to take time off from work to care for children, elderly, or frail relatives, whether to get more education and further training, or whether to move from one job to another.

This disintegration of life-course trajectories comes with significant financial costs. Switching between jobs, family obligations, and periods of leave expose households to earnings volatility, temporary income losses, and higher expenditures. Childcare or educational programs, for example, are expensive and without the help of public in-cash or in-kind support, households themselves shoulder most of the financial burden. Disruptions of life-course trajectories differ along one crucial dimension from disruptions of employment patterns. Income losses due to unemployment or sickness are—for the most part—involuntary. Life-course choices, on the other hand, are often under the control of individuals and shaped by the opportunity costs that result from making such choices. For example, taking time off work not only reduced earnings and incomes, sometimes all the way to zero, but also comes with potentially large opportunity costs regarding current and future job prospects, including foregone earnings, interrupted pension contributions, and disrupted work history that can make individuals ineligible for social insurance programs. For single parents, opting out of the workforce can simply be impossible. Unless public policies reduce these opportunity costs, for example through job protection, free or subsided childcare, or other forms of financial support, certain life-course choices will be limited to households with the requisite skills, jobs, and assets. Others may not even consider them.

For some individuals, the transformation of life-course trajectories carry new social risks (Bonoli and Natali 2012; Taylor-Gooby 2004). Yet for other they bring new social opportunities. Low-skilled or otherwise economically-disadvantaged individuals can easily fall through the flexible labor market and end up in non-standard atypical jobs with limited or no ben-
efits. Highly-skilled individuals, however, are better equipped to harness opportunities in the knowledge economy and can move from job to job, knowing that their career trajectory is much more likely to yield higher incomes in the future. Taking time off work to care for children or get more education and training is an investment in human capital that is likely to pay off in the future even though it comes with financial costs in the present. To be sure, even highly-skilled individuals face economic and financial risks in the knowledge economy, but the skill premium puts them in a much better position compared to low-skilled individuals (Autor, Levy and Murnane 2003).

Some OECD countries have responded to life-course changes by adapting their social policy toolkits and expanding social investment policies that aim to promote education, strengthen family policies, and bolster active labor market policies. Despite some change, social investment policies often provide incomplete financial support or legal protection throughout individuals’ life-course trajectories.

In this section, I discuss the general trend toward fragmented life-courses and supporting social policies and focus in particular on the contrast between Denmark, Germany, and the U.S. In Denmark, a set of comprehensive social policies reduce the opportunity costs of taking time off work, especially for lower-income individuals. Publicly-subsidized childcare, paired with comparatively generous maternity, paternity, and parental leave schemes, allow both parents to work full-time and support segmented life-course trajectories. In Germany, by contrast, social policies up until the 2000s promoted the single-breadwinner family through tax policies and extremely long parental leave schemes at low pay that stifled women’s incentive to work. Debates about childcare and leave policies similar to the Nordic model entered the political arena fairly late and have been introduced only recently. In the United States, life-course have also become more fragmented as individuals more frequently move from one job to another and take time off work to care for children or get education. But unlike Denmark, the welfare state provides only little support during various stages of individuals’ life-courses. The U.S. stands out with its lack of a unified family policy, forcing many households into shorter work-hours or unpaid absence from work.

2.2.1 Fragmented Life-Course Trajectories

The fragmentation of life-course trajectories is in large parts driven by the increase in women’s labor force participation, the breakdown of stable nuclear family structures, and the subsequent rise of more diverse family structures, including single-parent households and dual-earner couples (Blossfeld and Drobnic 2001; Goldin 2006; Lewis 2001).
The share of women working full-time reached 55% already in Denmark in 1967 but it took until 1978 in the U.K. and until 1998 in Germany for women to pass this mark (Bonoli 2013, p. 115). The gap between male and female employment has shrunken since the 1970s but began to level out in Denmark and Germany in the 2000s (Figure 2.6). Women in

![Figure 2.6: Labor Force Participation Rates by Gender](image)

*Notes: The figure shows labor force participation rates among all individuals of prime working age (25-54). Source: OECD Labor Market Statistics (2017).*

Denmark and other Nordic countries entered the labor market much earlier than in the rest of the OECD, but even Germany with its more family-oriented society as well as the U.S. saw a considerable increase in women’s share in the labor market. German unification led to an aggregate increase in female labor market participation since more women in East Germany had already been employed.

The rise of dual-earner couples and single-earner households also shaped the type of household children are born into, new demands for childcare, and the allocation of whether one partner should take time off work to raise children. Despite overall increases in women’s labor force participation, family arrangements still differ across countries. As panel (a) of Figure 2.7 shows, less than one-fifth of children in Germany grow up in a couple household where both parents work full-time, while in the U.S. and Denmark that share is 61% and 68%, respectively. It is still more common in Germany for one partner to work part-time or not at all. Among sole-parent households, the patterns are roughly similar, although the U.S. stands out with the largest share of full-time working single parents, whereas in Germany over a third of sole-parents are not working at all (panel (b)). Since Denmark has one of the highest rates of children growing up in households where both parents work full-time, it is perhaps unsurprising that it also has more children enrolled in child care facilities
Figure 2.7: Household Composition and Parental Employment Status of Households with Children, 2014

(a) Children in Couple Households

(b) Children in Single-Parent Households

Notes: Children under the age of 14 living in sole-parent households. Part-time employment is defined as usual weekly working hours of less than 30 hours per week in the main job, and full-time employment as usual weekly working hours of 30 or more per week in the main job. The U.S. data is for children under 17; it does not distinguish between part-time and full-time work. Source: E.U. Labor Force Study; U.S. Census.

(Figure 2.8). This reflects in large parts the greater availability and affordability of childcare spots in Denmark but can also be driven by differences in demand for childcare.

The traditional sequence of life stages into education, work, and retirement has turned into fragmented and de-standardized life-course trajectories where individuals go back to education and training after periods of work, leave employment temporarily to care for children and elderly or take sabbaticals, change jobs more frequently and occupations later on in life, and combine work with family and leisure in much more prolonged periods of interruptions. This fragmentation comes with considerable financial costs. First, expenditures for childcare
and education add a significant burden to households’ finance and have grown over time. Rising college tuition fees in the U.S. and, more recently, in the U.K. are the most visible figures in this domain and led to a near tripling of outstanding student loan debt in the U.S. from $364bn in 2004 to $966bn in 2012 (Eaton et al. 2016). Second, individuals lose income and forgo earnings during periods of leave. They also experience much higher income volatility as they move from one job to another, often with less pay than the previous job. Finally, these interruptions in employment history can make individuals ineligible for social insurance programs and thus reduce or even cut out government transfers in the present, for example unemployment benefits, or later in life, for example pension benefits. For many households with a high proportion of fixed expenditures such as spending on housing, transportation, and food, there is little scope for income fluctuations and outright losses, for example when one spouse leaves the labor market. The financial consequences of more flexible and disrupted life-course trajectories such as high and often rising costs for childcare, income losses during periods of leave from work, and earning fluctuations due to job-to-job switches are often only partially, if at all, absorbed by social policies.

2.2.2 The Turn to Social Investment Policies

In contrast to passive social consumption policies, which aim to maintain income and status through government transfers, social investment policies are future-oriented and focus on families, education, and active labor market policies as discussed above. These policies typ-
ically seek to improve individuals' employability and promote investment in human capital. For example, free or subsidized childcare allows parents to reconcile family and work and has been shown to positively influence child development and school performance later on, especially for disadvantaged children (Esping-Andersen 2009; Olivetti and Petrongolo 2017). Paid and job-protected maternity leave improves job continuity for women and increases the rate of return to full-time employment after birth. Yet this is only true for short-term leave as longer periods of leaves can negatively influence women's earnings, employment, and career advancement (Baker and Milligan 2008; Kluve and Tamm 2013; Rossin-Slater 2017). Support for education and training equips workers with new skills, while activation policies with retraining elements help unemployed individuals to match their skill-sets to new job opportunities.

In this section, I focus on family policies, including childcare programs and maternity and paternity leave policies, as well as policies that facilitate transitions between different life-course stages. In light of changing life-course trajectories and more dual-career households, financial support for families and more flexible work arrangements have become important political issues in almost all OECD countries. Yet perceptions about the role of the government in funding various programs and corresponding political demands differ across countries as the example of family policies shows. Asked who should primarily cover the costs for childcare, almost two-thirds of Americans say that these costs should primarily be borne by the family, whereas only 13% see it as the job of the government (Panel (a) in Figure 2.9). In Germany, by contrast, over half of all respondents stated that cost should be covered by the public purse. Danes occupy a middle position with more than half see the family and more than a third the government as the bearer of costs. Employers play a negligible role in Denmark and Germany and a higher but still small role in the U.S. When it comes to covering the costs for paid leave from work for families with new-born children, Americans have much stronger preferences for employer-based funding than Germans and, to a lesser degree, Danes, who both prefer a stronger role of the government. Still, almost half of Americans and around 40% of Danes and Germans say it should be a funding mix between the government and employers (panel (b)). The cross-national variation in family policy design mirrors at least partly those different attitudes. Denmark has a much stronger focus on publicly-funded childcare and leave policies, whereas the U.S. puts a much greater burden on employers but mostly on families themselves. In Germany, norms and policies have only recently changed from a family-based model with very little government interference toward more public support for childcare and parental leave.
Figure 2.9: Preferences for Funding of Childcare and Paid Parental Leave, 2012

(a) Preferred Funder for Childcare

(b) Preferred Funder for Paid Leave after Childbirth

Notes: Panel (a): Question: “Who do you think should primarily cover the costs of childcare for children under school age?” Panel (b): Question: “Consider a couple who both work full-time and now have a newborn child. One of them stops working for some time to care for their child. Who should pay for this leave?” Weighted survey responses. Source: ISSP 2012 Family and Changing Gender Roles IV.

Governments have responded to changing family arrangements by instituting family policies such as subsidies for child care, public child care facilities, and paid maternity and paternity leave, but many families still struggle financially with income losses and high expenditures. Children in particular are a financial burden for over half of Germans and almost one-third of Danes (Figure 2.10).

The financial support from welfare states strongly shapes the size of the income loss individuals face when they take time off work and the size of family- or education-related
Figure 2.10: Perception of Children as Financial Burden on Parents

![Bar chart showing perception of children as financial burden on parents in Denmark, USA, and Germany.]

**Notes**: Question: “To what extent do you agree or disagree with the following question: Children are a financial burden on their parents.” Weighted survey shares. Numbers indicated combined response share for strongly agree and agree. *Source*: ISSP 2012 Family and Changing Gender Roles IV.

Expenditures. Consider two extreme cases: on one end is Denmark, where paid maternity leave is available to all women and the financial support ranges from 100% of prior earnings for public employees and those in jobs where collective agreements stipulate such rates. On the other end is the U.S., where publicly-paid maternity leave is almost non-existent. Instead, if individuals decide to take a leave, it will often be unpaid. The financial costs and the legal protection of employment during and especially after leave periods depend to a great extent on the social policy framework. In the U.S., the opportunity costs of taking time off work are often prohibitively expensive such that only certain groups will be able to take time off. In Denmark, by contrast, the opportunity costs are much lower and result in much higher take-up rates.

Welfare states and their support for families has changed considerably during the last decades. Before modern welfare states were created and began to address larger parts of economic risks, the family itself was the most important source of protection. As welfare states grew, social programs not only “decommodified” individuals from the labor market by providing income support independent of market participation (Esping-Andersen 1990, ch. 2), but also made them less dependent on family structures for economic support. With growing fragmentation of employment patterns and life-course trajectories, welfare states
have become incomplete and social risks as well as social opportunities are shifting back onto the shoulders of individuals and their families. But the family itself, once a source of stability and economic protection, is less and less able to fulfill these functions adequately. Many more households are now dual-earner couples and depend on two sources of income not out of economic luxury but because of financial necessity (Hacker 2008; Warren and Tyagi 2003). As I will show in later chapters, households increasingly manage the growing financial burden by taking on debt and borrowing money to pay for basic social services. In the following part, I contrast changes in life-course trajectories and social investment policies in Denmark, the U.S., and Germany and focus in particular on family policies.

2.2.3 Country Cases

*Life-Course Trajectories and Social Policies in Denmark*

In Denmark, high employment rates for men and women and a comparatively high share of dual-earner couples shape life-course trajectories by tying a large part of the Danish population to the labor market. Already in response to the economic crisis of the 1970s, Denmark and other Nordic countries expanded public employment and increased the share of women in the labor force considerably. Today, most women, including those with children, work full-time. These ties, however, are not always stable and frequently interrupted when individuals leave work to care for children and elderly or take sabbaticals, when they go back to education and training after periods of work, or when they change jobs or occupations.

One way to represent the transitions of individuals throughout their life-course and employment trajectories is to map the relative size of flows to and from different stages. The chord diagrams in Figure 2.11 compare the flow of individuals in Denmark between different life-course stages from 1996 to 1997 (left panel) as well as from 2011 to 2012 (right panel). The arrows indicate flows from one category to the other, while the numbers on the corresponding edge of the circle indicate the combined shares of individuals that flow into and out of this category, relative to all individuals that are moving in that year. Note that the calculations of the flows only include individuals who change their status from one year to another. Those who, for example, remain employed or unemployed are not counted. Moreover, the diagram only displays flows with a share of equal to or greater than one percent of all individuals who change status.

The flow of individuals that move from employment into a form of education, including students and training, has increased in 2012 compared to 1997. Similarly, there are more
Figure 2.11: Employment and Life-Course Transition Rates in Denmark

*Notes:* The chord diagrams show flows of individuals between different life-course and employment stages from 1996 to 1997 (left) and from 2011 to 2012 (right). Arrows indicate flows from one category to the other. The numbers on the corresponding edge of the circle indicate the combined share of individuals that flow into and out of this category. The calculations of the flows only include individuals who change their status from one year to another, i.e. those who remain employed or unemployed are not counted. The diagram only displays flows with a share of equal to or greater than one percent of all individuals who change status. Labor market status is based on the full and consistent set of categories as defined by Statistics Denmark and the Danish Labor Force Survey. *Source:* Administrative register data.

Individuals in 2012 that leave employment to the “other” outside of work category. This is mostly driven by individuals on leave. In 1997, leave was more important because it included sabbatical and childcare leave, which was abolished in the late-1990s. Fewer individuals move from non-employment statuses into unemployment, suggesting that they either find new jobs or get training. Note that a large share of churning occurs within any given year and is therefore not captured by these flow diagrams.

A range of social investment policies helps smooth these life-course trajectories by providing legal protection and guaranteed rights, for example for time off work or education, and mitigate the financial consequences of fragmented life-course trajectories by offering financial support to individuals. The Danish welfare state provides income support for families in the form of child benefits as well as benefits for individuals (or parents jointly) when they are on maternity or paternity leave. Women are entitled to four weeks before childbirth and 14 weeks thereafter. Afterward, both parents are entitled to split 32 weeks of parental leave.
The level of maternity leave benefits is the same as unemployment insurance benefits and ranges accordingly between 30% and 90% of prior income, with a cap for the maximum benefit level. Virtually all women take paid maternity leave. For parental leave, the financial benefits equal 60% of the benefit paid during maternity or paternity leave (Ray 2008). Parents can also take a child-care leave, during which the parent is entitled to benefits amounting to 60% of the unemployment benefit rate. Finally, families with children receive a family allowance and day care for children is institutionally provided but paid for by the parents who send their children there (contributions can be up to 33% of the cost). Since the 1960s, the supply of childcare services increased steadily as childcare costs had to be split equally between parents, the municipalities, and the central government. But as female employment rose as well, demand typically exceeded supply (Albæk 2008). Dual-earner household with children can draw on highly developed and publicly-subsidized childcare services that make it easier for parents to reconcile work and family. Over 70% of Danish children age 0 to 3 are in childcare and 87% of them in care for 30h or more per week, 11% for 29h or less. For comparison, in Germany 44% of children spend 30h or more per week and 46% spend 29h or less (numbers for 2012) (Kvist 2015). In 1992, the government introduced a 36-week transferable parental leave, which was primarily geared toward addressing unemployment by encouraging parents to exit the labor market temporarily. In a similar vein, a range of new programs in 1994 tried to encourage individuals to take educational leave, sabbatical leave, or leave for childcare. Educational leave benefits were the same as unemployment insurance benefits, whereas sabbatical and child-care leave benefits were 80% of unemployment insurance benefits. High take-up rates forced the government to make it less financially attractive to take these leave programs and benefits for sabbatical and child-care leave were reduced to 70% and later 60% of UI benefit rate (Albæk 2008, ch. 3).

These policies help to smooth the fragmentation of life-courses because they kept the opportunity costs of temporarily leaving the workforce comparatively low. Lower-income families too can financially afford to take time off work because replacement rates are—much like in the case of unemployment insurance benefits—de facto more generous for lower-income families because of a relatively low maximum benefit cap. An important exception are public sector employees who receive 100% of their salary during periods of leave. In recent years, however, more stringent eligibility criteria and cuts in benefits levels, duration periods, or entire programs such as various leave schemes began to shift the financial burden of life-course fragmentation onto households. For example, in 1995, a year after general elections were held, the government phased out the leave scheme as well as the possibility of
joining education programs while on unemployment benefits. In 1999, the sabbatical leave program was abandoned (Green-Pedersen and Klitgaard 2009). Despite growing costs and declining governmental support, take-up rates of leave programs, educational opportunities, and childcare services remain high.

The financial burden of fragmented life-courses affects households differently. Public employees tend to be better compensated financially during periods of leave and receive full pay during maternity leave; private sector employees may receive full pay only if stipulated in their collective agreement, otherwise the replacement rate is 50%, while still others get the same amount as sickness benefits. Households that depend on two sources of income to finance a high share of fixed expenditures, the income loss of one spouse taking time off can be financially challenging. Lower-income individuals receive more generous government transfers relative to their income than higher-income individuals because of a comparatively low maximum benefit level.

Life-Course Trajectories and Social Policies in the United States

Between the 1970s and the 2000s, a growing share of women entered the US labor market. At the same time, male labor market participation rates declined (cf. Figure 2.6). More married women with children moved away from being stay-home mothers that cared for their children and began to work full-time. In 1967, two-thirds of children grew up in a household where one parent was at home full-time and one-third of children had full-time working parents. By 2009 the situation had reversed (Fox et al. 2013, p. 26).

Much like in Denmark, the number of dual-earner, full-time working parents has increased steadily. Yet the financial consequences between the U.S. and Denmark differ starkly. In the U.S. government support for paid leave or childcare is limited and in some cases non-existent, resulting in high opportunity and financial costs when parents want to take time off work. For most households, a second earner has become a financial necessity in light of stagnating wages, incomplete social policies, and rising costs of housing, education, childcare, and healthcare (Warren and Tyagi 2003). The family no longer fulfills the same risk-sharing mechanism it once did when the spouse who was not working could get a job alleviate temporary financial constraints. But the reliance on two sources of income further increases the risk of income volatility since both spouses, not just one, can experience earnings losses.

Figure 2.12 shows individuals' flow through different life-course and employment stages over two decades. A few trends stand out. The share of homemakers has dropped considerably and fewer individuals move from unemployment to homemaking. The rise in female
employment is largely responsible for this trend. But note that there are also fewer people who move from homemaking into employment. Second, there are more individuals that find a new job after unemployment, but many of these jobs are lower quality and no longer come with the same pay, employment stability, or benefits as in the past (Weil 2014). Third, the share of students, which also includes individuals in training, has increased significantly, but a growing number of student do not find jobs and become unemployed.

In comparison to its European counterparts, the U.S. welfare state has no explicit or coherent family policy and provides few, if any, legal protections and only limited financial support for families and children. Most notably, the U.S. is the only country in the OECD that does not offer paid maternity leave with job protection after childbirth. Combined with fewer vacation days and lax work hour regulation, American parents face high opportunity costs if they want to leave work to raise a family. The only national policy is the Family and Medical Leave Act (FMLA), enacted under President Clinton in 1993, which guarantees employees of firms with more than 50 employees who were full-time employed for 12 months up to 12 workweeks of unpaid leave each year. While leave is universally available in Denmark, FMLA is only available to FMLA-eligible employees once they used up their sick leave and vacation time before being allowed to use family leave. Estimates suggest
that only about 11% of private-sector firms are covered by the FMLA, representing about 60% of private-sector employees (Klerman, Daley and Pozniak 2012). In 2015, only 12% of employees in the private sector could take paid family leave through their employers. In five states (California, Hawaii, New Jersey, New York, and Rhode Island), mothers of newborn children can qualify for about six weeks of paid leave under the temporary disability insurance system. Four of these states have enacted paid leave programs (California in 2004, New Jersey in 2008, Rhode Island in 2014, and New York effective of 2018), ranging from four weeks in Rhode Island to twelve weeks in New York. Average benefit levels depend on prior earnings and are capped between $551 and $448 per week. Yet high opportunity costs and in some cases lacking awareness of these programs keep take-up rates low. Over ten years after California enacted its paid leave program, only 36% of voters were aware of its existence. Strict eligibility criteria, low replacement rates or no pay at all, and the lack of job protection during and after leave periods raise the opportunity costs of leave and tend to stifle take-up, especially among lower-income households and those in low-wage jobs (Rossin-Slater 2017).

The U.S. also stands out in contrast to other European countries for not having per-child cash benefits for parents with dependent children. Instead, there are tax credits for children and limited tax subsidies for childcare available, but only few publicly-funded childcare spots. High opportunity costs, mostly financial, are one important factor explaining why the U.S. has the lowest rate of child enrollment in pre-primary education (ages three to five) among OECD countries (Lynch 2014).

Incomplete social policies make individuals more dependent on non-government forms of financial support and services. Employers play an important role as a private provider of benefits, but as the example of the two janitors working for Kodak and Apple illustrated, their function as private welfare provider is crumbling. Jobs are no longer enabling individuals to harness social opportunities, including child care or education, and are reduced to an increasingly unstable source of income. Even though employers have cut back on private benefits, Americans are still more likely to prefer employers over the government to fund childcare and maternity leave compared to Danes or Germans (cf. Figure 2.9). Social policies can put further strains on households’ financial situation by reinforcing individuals’ dependence on employment and demanding self-responsibility. Strict benefit eligibility rules and relatively low benefit levels are designed to encourage individuals to actively seek work rather than freeing them from employment through financial support (“decommodification”) as in other countries. For example, low-income women in most U.S. states are considered employable from the time their children are three months old. Single mothers in particular
depend on employment as a source of income in light of incomplete social policies. As the share of children who grow up in single-parent households has doubled from 13% to 26% between 1970 and 2009, the share of full-time working single mothers has increased from 36% to 70% (Fox et al. 2013, p. 26).

Fragmented life-courses can pose a heavy financial burden for many individuals. High opportunity costs due to incomplete social policies only allow middle- or higher income individuals and families to weather disruptions and seize social opportunities. In other words, deliberate choices to take time off work—for example to care for children or to get further training—are only available to those who can stem high opportunity costs in the first place. A low-income single-mother in Denmark will receive relatively generous maternity benefits during her job-protected leave period. In the U.S., however, a low-income single-mother has most likely no right to job-protected paid maternity leave. If she still decides to take time off, it would be unpaid and come with the risk of her losing her job completely. Only those who work for companies with paid maternity or even paternity leave policies and can afford the costs of private childcare are able to overcome those opportunity costs.

*Life-Course Trajectories and Social Policies in Germany*

Life-course trajectories in Germany have changed more recently. For most of the postwar years, the conservative Christian-democratic welfare state rested firmly on the single, typically male breadwinner model and the family as a risk manager. It supported the one-earner family through a range of policy instruments, including joint taxation of spouses, extremely long parental leave schemes, and pension contribution credits for caring mothers. For many decades, these policies and their focus on the single breadwinner model have suppressed women’s participation in the labor market, which began to grow only late and at lower rates compared to other OECD countries (cf. Figure 2.6). The response to the labor shortage in the 1960s and 70s is a telling example of Germany’s focus on the single-earner family model: employers and union leaders did not consider bringing more women into the labor market as other countries like the Nordics had done; instead, they created guestworker programs and opened borders for immigrants (Manow and Seils 2000). It was only in the years after unification that more women began to seek full-time employment.

The rise in female employment is in large part responsible for the decline in the share of individuals who are classified as not working (but are not unemployed). In the 1980s, almost 40% of low-income individuals were not working as opposed to only 10% of high-income individuals, but that number has dropped to around 20% in 2013 (Figure 2.13).
Figure 2.13: Share of Individuals in Different Life-Course Stages, by Income Group

Notes: Low-income is defined as those in the bottom quintile of the income distribution; high-income are those in the top income quintile. Source: SOEP.

increase in non-standard forms of employment such as Mini or Midi jobs and unstable or second jobs but also the rise in unemployment is primarily driven by low-income individuals. The share of individuals in various forms of leaves, most prominently maternity leave, and training, by contrast, has increased only little. But with regard to job switches, evidence from cohort studies suggests that cohorts born after 1950 change their jobs more frequently and that the rate of job shifts among men born in 1971 more than doubled. The life courses of women began to resemble those of men with respect to transitions from school, training, and work (Brückner and Mayer 2005). This suggests that life-course trajectories in Germany have also become more disintegrated.

Figure 2.14 takes a different perspective on these changes and compares individuals' flows through different life-course and employment stages in 1991 and about twenty years later. In 2010, there was much more fluidity from employment into various forms of non-standard and atypical jobs, but also vice versa, then two decades ago. Flows to and from maternity leave or training, however, remained fairly constant. Most noteworthy is the growth in unstable, temporary or part-time second jobs and the new categories of Mini and Midi-jobs with limited benefits. Mini and midi-jobs can be a stepping stone toward full-time employment, but a slightly larger share of individuals also moves into these types of jobs from full-time employment, unemployment, and training. Similar to findings from the U.S., the share of non-working individuals has declined, mostly driven by women entering the labor market. Overall, there is less movement from employment into unemployment or the
Changes in social policies itself played a considerable role in breaking up and segmenting life-course trajectories. Up until the 2000s, family and tax policies had incentivized and protected one-earner families. In 1986, the Conservative government introduced parental leave available to all parents regardless of employment status for 36 months. The first ten months were job-protected and benefits were set at a universal, fixed level for the first six months (DM600 as long as household income was under DM29,400 in the period of 1986-1991). The maximum duration period was increased steadily to 24 months in 1993, while since 1992 parents enjoyed job-protection until the third birthday of a child. Compared to the Nordic approach, parental leave was much longer but considerably less-well-paid and incentivized women to stay at home. These policies were designed to alleviate pressures on the labor market by supporting mothers to stay outside the labor force (Bonoli 2013, ch. 6). As a consequence, less than one-third of mothers with children under six years were employed in the late-1980s (53% of American women were employed at that time).
Political debates about social policies that would help parents reconcile work and family obligations such as Nordic-style maternity leave policies and public childcare services entered the political arena comparatively late in the early 2000s under Chancellor Schröder. In 2001, parental leave policies moved closer to the Danish model when the leave duration was shortened to 12 months and benefit levels were increased. As of 2007, parents are entitled to a 12 to 14 month paid leave period with benefits of 67% of prior earnings (up to a cap of €1,800 per month). Childcare became another focus in the 2000s as federal funds were channeled to aid Länder to expand and invest in childcare services for children under the ages of three (Bonoli 2013, ch. 6). The government further enacted that every child over the age of one has the legal right to a spot in a public daycare facility. This proved not to be an empty-handed promise when Germany’s highest court ruled in October 2016 that parents who cannot find a childcare place for their child can sue the government for lost wages. This further underlines the strong demand among Germans that childcare should be provided for and paid by the government (see also Figure 2.9).

2.3 The Social Policy Shortfall

The preceding sections have demonstrated that the transition from stable Fordist economies into flexible knowledge economies brought disruption and fragmentation in individuals’ employment patterns and life-course trajectories. As a result, households not only experience income losses due to unemployment or sickness but also due to voluntary decisions such as taking time off work to raise a family or get further education. Welfare states, however, have often not kept up with new sources of income instability and expenditures. Retrenchment and policy drift have led to incomplete provision of social benefits and services. The gap between households’ financial needs and welfare states’ financial support results in what I call a social policy shortfall.

As the name suggests, the causes of the social policy shortfall and its change over time and variation across countries are driven by political choices. The wide-spread deregulation of labor markets and cuts in social policies are the most visible forms of policy intervention that drive wedges of insecurity into individuals’ daily lives. Other factors that influence employment patterns and life-course trajectories are typically seen as exogenous, such as deindustrialization, technology-driven skill bias and new forms of jobs, and new family structures. But what makes these exogenous trends political issues is the failure of policymakers

\(^{17}\)There is a strong legal component to the separation of public and private spheres in Germany, enshrined in the Basic Law of 1949.

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to adapt existing policies to changing realities and to create new policies and regulatory frameworks that address the financial consequences of these trends. These less visible but equally consequential forms of political inaction lead to policy drift and further shift the burden of financial insecurity onto the shoulders of families.

Income volatility—a key contributing factor to social policy shortfalls—has emerged as a critical issue to help us understand financial security and economic risks. Disruptions of individuals' employment patterns and life-course trajectories make gross incomes, in most cases earnings, more unstable. For example, involuntary job losses, flexible work hours, or deliberately taking time off work for maternity leave result in volatile incomes. Welfare states absorb parts of the volatility of gross incomes by providing financial support to affected families. Unemployment insurance, maternity leave benefits, or tax credits are examples of government transfers that mitigate the size of income losses, thereby reducing households' net income volatility. But cuts in benefits and stricter eligibility requirements have reduced social policies' efficacy to address the volatility of households' gross incomes and are now themselves a source of volatility. Flexible work hours and more frequent unemployment spells can make individuals ineligible for unemployment benefits because they reduce insurance contributions or required work hours. Lastly, changes in family composition such as divorce or childbirth can also increase the instability of household incomes. The combination of more volatile incomes and declining and incomplete government support leads to a growing financial burden for many individuals and their families.

A growing body of work, mostly about the U.S., documents substantial increases in the volatility of male earnings since the 1990s and of household incomes since the 1970s. Yet we know little about the composition of income volatility before and after government transfers and its variation across countries. In the following section, I fill this gap and offer a macro-level long-term perspective on households' income volatility and the social policy shortfall in Denmark, the U.S., and Germany. I first conceptualize the social policy shortfall and propose a way to estimate it across countries before turning to the empirical evidence.

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18See, for example, Dahl, DeLeire and Schwabish (2011); Dynan, Elmendorf and Sichel (2012); Gorbachev (2011); Gottschalk and Moffitt (2009); Gottschalk et al. (1994); Hacker (2008); Hacker and Jacobs (2008); Shin and Solon (2011).

19An important exception is the cross-national work on income risk, including income inequality and income volatility, by Nichols and Rehm (2014).
2.3.1 Conceptualizing Social Policy Shortfalls

I conceptualize the effect of the welfare state in addressing income volatility as the difference between the volatility in gross income, i.e. before taxes and transfers (“pre-government”), and net income, i.e. after taxes and transfers (“post-government”). Social policies reduce or “soak up” parts of the volatility in gross income, for example by providing income support through unemployment insurance or child benefits. Analytically, the difference between the volatility of gross and net incomes therefore reflects the gap between households’ financial needs and the welfare state’s financial support—the two elements of social policy shortfalls. The reduction in volatility from gross to net income can be attributed to social insurance benefits such as unemployment or sickness benefits and social investment benefits such as child benefits, educational support, or paid maternity leave.

Comparing the volatility of gross and net incomes therefore allows us to shed light on the degree to which social policies mitigate income losses. Figure 2.15 illustrates this approach. The micro-level perspective of panel (a) decomposes the income trajectory of an individual,

Figure 2.15: Stylized Model Linking Income Loss and Income Volatility
(a) Individual-Level: Gross vs Net Income Loss    (b) Macro-Level: Aggregate Income Volatility

let’s call her Monica, into gross income (i.e. before taxes and transfers) and net income (i.e.

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20 The difference between gross and net income is the sum of public transfers minus taxes. In addition to public transfers that smooth out fluctuating incomes, taxes affect the difference between gross and net income volatility if tax rates, tax brackets, or tax reimbursement schedules such as tax credits change. In the U.S. case, tax credits such as the Earned-Income Tax Credit play a large role as part of the hidden welfare state (see, for example, Howard 1997).

21 The difference between gross and net income is the sum of public transfers minus taxes. In addition to public transfers that smooth out fluctuating incomes, taxes affect the difference between gross and net income volatility if tax rates, tax brackets, or tax reimbursement schedules such as tax credits change.
after taxes and transfers). Monica was employed and earned income of the amount of $I_1$ but loses her job in $t_0$ for a few months. If there were no social safety net in place, her gross income would drop from $I_1$ to $I_3$, indicated by the orange line. But since she is able to draw on unemployment benefits, her net income only falls to $I_2$, limiting her realized income loss to the red area. In other words, the welfare state mitigates the effect of job loss on Monica’s net income by providing financial support in the form of unemployment benefits.

Income fluctuations arise due to disruptions in employment patterns such as unemployment or shorter work hours as well as life-course trajectories such as educational or family-related time off work. We can calculate the volatility of households’ gross and net incomes on an annual basis and aggregate it to the macro-level to get a broader picture of households’ income fluctuations and the resulting size of social policy shortfalls as illustrated in panel (b). The orange area captures the reduction in gross income volatility due to the welfare state. Social policies are not addressing the full share of fluctuations and leave households with some residual volatility, indicated by the red area. In this particular example, net income volatility increases over time due to higher gross income volatility, less comprehensive social policies, or a combination of both. In other words, the red area is the share of income volatility that is not addressed by social policies and therefore constitutes the financial burden that households have to shoulder themselves. In the next section, I describe in greater detail how I measure income volatility.

2.3.2 Measurement and Data

Volatility is the variability in incomes over time and entails both positive and negative movements. It can result from involuntary income shocks such as unemployment or sickness but also from voluntary choices such as temporary jobs with lower income or taking time off from work for education. There is no clear consensus in the literature on the best way to measure or estimate volatility. Some studies opt for simple and transparently statistics such as variance and dispersion of earnings, while other studies attempt to isolate transitory income changes from permanent ones using parametric time-series decomposition techniques.22 These latter models, however, are very sensitive to modeling choices and the underlying econometric assumptions (see Nichols and Rehm 2014; Shin and Solon 2011). Given the lack of consensus in the literature and my primary interest in comparing trends in net and gross income volatility across and within countries, I adopt a more transparent approach related to Dynan, Elmendorf and Sichel (2012) and measure the volatility of income $Y_{it}$ as the arc percentage change

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22For an excellent review of conceptual and measurement issues see Gottschalk and Moffitt (2009).
in annual income as follows:

$$
\Delta Y_{it} = 100 \times \frac{Y_{it} - Y_{it-1}}{\frac{1}{2}(Y_{it} + Y_{it-1})}
$$

(2.1)

The arc percentage change is naturally bound between ± 200 and less biased by outliers than simple percentage changes, which makes it a commonly-used measure of income volatility.\(^{23}\) Note that this measure of income volatility captures both upward and downward volatility. To isolate downward, negative volatility, I focus only on households that experience income losses from one year to another. I follow prior work on income volatility and economic insecurity and focus on households that lose more than 25 percent of their income (see, for example, Dynan, Elmendorf and Sichel 2012; Hacker et al. 2014; Morduch and Schneider 2017). Based on this measure of (negative) income volatility, I calculate cross-sectional summary measures such as the share of households that experience income losses of at least 25 percent, the average size of these income losses, and the standard deviation based on this micro-level volatility measure. While earlier work has studied the volatility of labor earnings, I follow more recent studies and take a broader perspective by focusing on the volatility of household income. I argue that the household is the adequate unit of analysis because financial and economic insecurity depends on the resources that households have at their disposals. Studying individual-level earnings volatility of a single earner would miss mitigating effects of a second earner in the household.

I estimate income volatility for Denmark, Germany, and the U.S. using data from Danish full-population administrative records, the German Socio-economic Panel (SOEP), and the Panel Survey of Income Dynamics (PSID) in the U.S. For detailed information on data source please refer to section A.1 in the data appendix. The administrative records are extremely comprehensive and provide detailed information on all income components. The SOEP and PSID are the longest-running representative surveys of German and U.S. households, respectively, and an ideal empirical source of tracking long-term changes in households' incomes.\(^{24}\) While the Danish and German data is available on an annual basis, the PSID switched to a biannual survey since 1997. I harmonize the datasets such that gross and net household incomes follow the same definition.\(^{25}\) The final datasets are a subset of households where the household head is between the ages of 16 and 65 to capture the working population.

\(^{23}\) See, for example, Davis, Faberman and Haltiwanger (2006); Dynan, Elmendorf and Sichel (2012).

\(^{24}\) On some of the methodological issues associated with the PSID see Shin and Solon (2011).

\(^{25}\) Specifically, I draw on the Cross-National Equivalent File (CNEF) for the SOEP and the PSID, which contains harmonized income variables. The Danish administrative records are detailed enough to allow me to replicate the same definition of gross and net income as in the CNEF.
Individuals who are self-employed are excluded. All nominal income data is deflated into real 2010 local currencies.

These datasets have shortcomings, most importantly because they only capture annual snapshots. But income volatility measured as year-to-year fluctuation masks considerable variation during the year. In their Financial Diaries project, Morduch and Schneider (2017) followed a sample of American households on a monthly basis and recorded households earnings, incomes, and borrowing patterns at a much more fine-grained level. While this level of granularity would be ideal, comparative, long-term panel data at monthly intervals does not exist for most countries. The annual variation documented in the sections below can therefore be taken as a conservative baseline of households’ income volatility, bearing in mind that intra-year variability is likely to be higher.

2.4 Mapping Income Volatility and Social Policy Shortfalls

In this section, I document changes in income volatility across and within Denmark, Germany, and the U.S. based on the stylized model of Figure 2.15. Specifically, I show to what extent disruptions in employment patterns and life-course trajectories lead to fluctuations in households’ gross incomes and the degrees to which welfare states mitigate these fluctuations as reflected in the volatility of households’ net incomes.

2.4.1 Social Policies As Financial Buffer

The comparison of gross and net income volatility reveals considerable differences across households in Denmark, the U.S., and Germany. Figure 2.16 shows the share of households that experience a decline in gross and net incomes of 25 percent or more from one year to another. Consider first the cross-national variation in households’ gross income volatility. The orange dots show the annual share of households that experience an annual income loss of 25 percent or more in gross income, that is before taxes and transfers (“pre-government”). Households’ gross incomes fluctuate considerably across and within countries. In Denmark, over 15 percent of all households lose more than a quarter of their gross income annually, with mild increases in the early 1990s, the early 2000s, and again in the aftermath of the financial crisis of 2007. Germany follows a similar but more volatile pattern as the share of affected households grew during the 1990s and early 2000s to almost 20 percent, with a slight
Figure 2.16: Share of Households with Net Income Loss of 25 Percent or More

Notes: The dots show the annual share of households that experience an annual income loss of 25 percent or more in gross and net income, respectively. The lines are fitted locally-smoothed polynomials. The light green vertical bars illustrate the effect of the welfare state. The graphs for the U.S. and Germany use survey sampling weights; the graphs for Denmark are based on the entire population. Sources: PSID (USA), SOEP (Germany), and administrative records (Denmark).

drop in the late-1990s. Note, however, that the share fell to around 15 percent during the 2000s. The U.S., by contrast, stands out as the country where more households experience significant fluctuations in their incomes. Since the late-1980s, the share of households with considerably income losses has doubled from around 15 percent to around 30 percent in the aftermath of the financial crisis. Both voluntary and involuntary disruptions of employment patterns and life-course trajectories add to the growing volatility of gross incomes. In part, these disruptions reflect labor market structures, including weak employment protection, that facilitate higher job turnover and more frequent spells of unemployment. But they also reflect individuals' choices about job switches, taking time off work for education or family-related leaves. I return to this distinction below.

What matters for households, however, is not necessarily the volatility of their gross incomes—mostly earnings—but rather how much of these fluctuations affect their net incomes, that is after taxes, tax credits, and government transfers. Welfare states absorb to varying degrees the effects of such income losses through social investment and social consumption policies. This mitigating effect of the welfare state is captured by the difference between gross and net income volatility. In other words, net income volatility is a measure of fluctuations in incomes after taxes and transfers and thus indicates the real financial burden
households have to shoulder. The red triangles in Figure 2.16 indicate the share of households that experience a loss of 25 percent or more of their net, post-government income. The vertical green bars illustrate the effect of welfare states, that is government transfers and tax expenditures, in reducing households' burden of gross income losses.

Among the three country-cases, the Danish welfare state absorbs the largest share of households' income losses. During the 1990s, around seven percent of households experienced a net income loss of 25 percent or more. Since the early 2000s, however, the share of households affected by these significant net income losses has climbed to almost ten percent. In Germany, around ten percent of households lost a quarter of their net income from one year to another, with a strong, temporary increase in the mid-1990s and the early 2000s. The German and Danish welfare states absorb a considerable part of households' gross income losses, thus reducing the number of households that experience net income losses of at least 25 percent. By contrast, households in the U.S. are worse off. A higher and growing share of households is already exposed to fluctuations in gross incomes, but the welfare state does little to reduce the effect of income losses. The share of households that lose at least a quarter of their net income is only slightly smaller compared to gross income volatility data, illustrating the limited absorptive capacity of the U.S. welfare state. As household gross incomes have become more volatile over time, the welfare state has done very little to address income losses.

Welfare States as Financial Buffer

Given the variation in the number of households with significant income losses, the next question is how large the size of these income losses is. Figure 2.17 plots the average income loss, again for gross and net income, for all households that experience a decline in income of 25 percent or more from one year to another. As before, the difference in the volatility of gross and net incomes, indicated by the vertical green bars, captures the effect of social policies and tax expenditures in reducing gross income volatility. Across the three country cases, Danish households lose by far the largest amount in gross incomes. The economic recession of the early 1990s led to more volatile incomes, peaking at an average loss of around 110 percent, followed by a period of declining volatility. Since the mid-2000s, however, gross income volatility is growing again. In the U.S. and particularly in Germany, the average size of the gross income loss is smaller, but households in both countries are losing more income annually than the past decades. Since the early 2000s, American households in particular
Figure 2.17: How Much of Households’ Income Loss Is Absorbed By Welfare States

Notes: The dots show the average household income loss (negative values), defined as the annual percentage change in income, for all households that experience a more than 25 percent decline in income from one year to another. The lines are fitted locally-smoothed polynomials. The light green vertical bars illustrate the effect of the welfare state. The graphs for the U.S. and Germany use survey sampling weights; the graphs for Denmark are based on the entire population. Sources: PSID (USA), SOEP (Germany), and administrative records (Denmark).

have experienced strong increases in income losses, up from an average of 80 percent to almost 100 percent loss.

The red triangles and lines show the size of households net, post-government income volatility, indicating how much of households’ gross income volatility welfare states absorb through government transfers and tax expenditures. Complementing the picture painted by Figure 2.16, the green bars indicate that the Danish welfare state reduces the burden of income volatility the most, followed by the German and American welfare states.

Comparing the three country-cases, a few noteworthy trends stand out. The volatility of gross incomes of Danish households has grown slightly in the past decade, but the absorptive capacity of the welfare state has weakened, resulting in growing net income volatility between the late-1990s and the mid-2000s. By contrast, the gross incomes of German households have become more volatile, but the welfare state absorbed these increases and kept net income volatility fairly stable. In the U.S., the welfare state not only addresses a smaller share of gross income volatility, but its effectiveness has been declining since the 1990s. Table 2.1 provides a comparative snapshot of the most recent numbers. Among German and Danish households that suffer income losses of 25 percent or more, their average income drops by around 60 percent, reducing a hypothetical $60,000 net income to around $32,000. Slightly
Table 2.1: Income Volatility in 2013, Gross and Net Incomes (in %)

<table>
<thead>
<tr>
<th>Country</th>
<th>Share of households</th>
<th>Average income loss</th>
<th>Share of households</th>
<th>Average income loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>15.7</td>
<td>104.9</td>
<td>8.7</td>
<td>60.1</td>
</tr>
<tr>
<td>United States</td>
<td>25.7</td>
<td>96.0</td>
<td>21.5</td>
<td>77.4</td>
</tr>
<tr>
<td>Germany</td>
<td>15.6</td>
<td>85.7</td>
<td>10.2</td>
<td>59.4</td>
</tr>
</tbody>
</table>

Note: Shares of households that experience an income loss of 25 percent or more from one year to another. The average income loss captures the average size of income lost among these households. Data for Germany and the U.S. from 2013; data for Denmark from 2012.

more households in Germany are affected by such income loss compare to Denmark. In the U.S., over twice as many households experience such income losses compare to German and Denmark. The average size of their income losses is also larger, reducing a $60,000 net income by 77 percent to around $27,000.26

The averages displayed in the previous figures, however, mask considerable differences within countries and across households. Figure 2.18 shows the dispersion of the micro-level volatility of households’ gross and net income, measured by the annual cross-sectional standard deviation. Denmark has the largest degree of variation across households’ gross

Figure 2.18: Variation in Income Volatility Across Households

Notes: The dots show the standard deviation of the average size of the income loss for all households that experience a drop in income of 25 percent or greater from one year to another. The lines are fitted locally-smoothed polynomials. The graphs for the U.S. and Germany use survey sampling weights; the graphs for Denmark are based on the entire population. Sources: PSID (USA), SOEP (Germany), and administrative records (Denmark).

26 Both calculations are based on the arc percentage-change formula in equation 2.1.
income volatility among the three cases, but there is only little change over time. But
the welfare state increasingly differentiates across households in how much of gross income
volatility it addresses, indicated by the declining difference in the standard deviation of
gross and net income volatility. In other words, some households receive fewer government
transfers than others, increasing the variability in net income volatility. As I will show below,
the growth since the mid-2000s is in large parts driven by rising income volatility among
lower-income households. In the U.S. there is less variation in households’ gross income
volatility compared to the Danish cases, but overall the variation in gross and particularly
net income volatility has increased. The growing exposure of American households to income
shocks is mirrored by a growing differentiation through the welfare state. In Germany, by
contrast, the variation in both gross and net income volatility across households has only
mildly increased since the 2000s, in line with the status-segmenting outcomes associated
with the German welfare state (see Esping-Andersen 1999; Palier 2010). In Denmark and
the U.S., the variation in households’ net income volatility increased markedly, suggesting
that the welfare state differentiates more and more among individuals and households.

2.4.2 Who is Affected Most by Income Losses

Major swings in incomes are affecting many households in Denmark and Germany and
are particularly prevalent in the U.S. One the one hand, the combination of flexible labor
markets and weak employment protection in Denmark and the U.S. make gross income more
volatile compared to Germany, yet the welfare state absorbs a larger share of this volatility
in Denmark than it does in the U.S. The volatility figures reflect key institutional differences
across the three countries such as the “flexicurity” model of Denmark and the market-oriented
and employment-dependent model with limited provision of social support of the U.S. (Alber
2010). Yet on the other hand, income volatility also reflects individuals’ life-course choices
about education or child-rearing. From a household’s perspective, it is their net income
that determines their financial scope and economic security. Since welfare states protect and
support individuals and families differently across countries, for example by targeting lower-
income households or by providing income support to labor market insiders, households’
exposure to fluctuations in their net incomes differs as well.

In this and the following sections, I only look at net, “post-government” income and
study variation in income volatility across households along two important dimensions. First,
households’ position in the income spectrum. This matters because households have different
abilities to cope with income losses, in part because of their own financial situation, but in
part also because welfare states provide differential support for households depending on their incomes and assets. Second, households' employment status and related reasons for experiencing income losses in the first place. On the one hand, involuntary disruptions of employment patterns, for example due to unemployment or sickness, cause considerable income losses which, to varying degrees, are mitigated by social insurance policies. On the other hand, households make deliberate life-course choices, for example temporarily taking time off work for education or child-rearing, that similarly result in income losses or higher expenses.\textsuperscript{27}

\textit{Net Income Volatility for Different Income Groups}

Households across the three country cases are exposed to different degrees to income losses as the panels in Figure 2.19 show. Panel (a) splits the share of households that experience a 25 percent net income loss into three different income quintiles based on net labor income in the year prior.\textsuperscript{28} In Denmark, slightly more higher-income households are hit by such sizable net income losses than middle- or lower-income households. There are now fewer higher-income households with such income losses, but the share of middle-income households has climbed from around six percent in the late-1990s to almost 10 percent in the late 2000s. In the U.S., more households across the income spectrum experience significant net income losses. The share of middle-income households more than doubled since the late 1990s from around 12 percent in 1998 to 26 percent in 2011. There are more households in the top 20\textsuperscript{th} percentile with such large income losses than in other income groups. By contrast, in Germany, the share of lower-income households with large net income losses has almost doubled since the early 1990s to around 13 percent in 2012, whereas the share of middle- and higher-income households with similar income losses declined.

To get a sense of how the amount of income losses is distributed across income groups, panel (b) of Figure 2.19 shows the average size of net income loss among households whose net income dropped by 25 percent or more. In all three country cases, income losses have become larger over time but there are important differences across households. Among households with a large income loss, lower-income households in Denmark and the U.S. experience roughly similar losses. Middle- and higher-income American households saw

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\textsuperscript{27}In this chapter, I focus on the volatility of incomes but do not study fluctuations in expenses or consumption. For work on the latter domain see, for example, Blundell and Pistaferri (2003); Gorbachev (2011); Johnson, Parker and Souleles (2006).

\textsuperscript{28}Otherwise households with a large income drop might fall into another income quintile and bias the average volatility within income quintiles.
Figure 2.19: Variation in Net Income Loss by Income Group

(a) Share of Households with Net Income Loss of over 25%, by Income Quintiles

(b) Average Net Income Loss, by Income Quintiles

Notes: Panel (a): the dots show the annual share of households that experience an annual net income loss of 25 percent or more across different income quintiles. Panel (b): the dots show the average household income loss (negative values), defined as the annual percentage change in income, for all households that experience a drop in income of 25 percent or greater from one year to another across different income quintiles. The lines in both panels are fitted locally-smoothed polynomials. Income quintiles are based on net labor income in the prior year. The graphs for the U.S. and Germany are constructed using survey sampling weights; the graphs for Denmark are based on the full population. Sources: PSID (USA), SOEP (Germany), and administrative records (Denmark).

Their incomes decline to larger degrees than Danish households. Yet the key difference is that in the U.S., across the income spectrum, three to four times as many households see
their incomes decline by at least 25 percent compared to Denmark. In other words, the share of lower-income Danish households that experience significant income losses remained fairly stable, but the average size of income losses among them has increased. In the U.S., not only has the number of lower-income households with significant income losses grown, but these households also suffer larger losses. In Germany, income losses have grown only for higher-income households, but the share of households that experience such losses has declined (cf. panel (a)). More lower-income households suffer from significant income losses, but in contrast to the other cases the overall size of these losses fell.\footnote{Figure A.2.1 in the Appendix shows the average size of income losses weighted by the share of households that experience a loss of 25 percent or more.}

*How Disruptions in Employment Patterns and Life-Course Trajectories Influence Net Income Volatility*

Disrupted employment patterns, most importantly through spells of unemployment, are an important source of involuntary income volatility. But deliberate life-course choices have become an equally important driver of income fluctuations. These choices are about taking time off work, educational attainment, or child-rearing, and lead to what I refer to as *discretionary* income losses and, in some cases, higher expenses.

In this section, I decompose income losses based on three sources: first, incomes can become volatile because of job-to-job switches and fluctuations in work hours or pay (employment). Second, volatility can be driven by unexpected temporary disruptions of employment such unemployment or sickness (involuntary employment disruptions). Finally, income losses can be caused by deliberate life-course choices such as taking time off work for educational or family-related reasons (life-course choices). Table A.2.1 in the Appendix shows the exact definition of the source of income volatility for each country. As before, I use the micro-level measure of net income volatility and split households into their respective source of income loss in a given year, sorted based on the employment status of the household head. For example, if the household head becomes unemployed in one year, her status in that year would fall into the category of involuntary employment disruptions. If she moved from one job to another in the next year but experienced declining earnings, she would be grouped in the category of employment.

The panels in Figures 2.20 show how many households are affected by different sources of income loss as well as the average size of such income losses. As before, the lines in each panel are smoothed loess trends that are less noisy than the underlying data points.
Panel (a) begins by documenting the share of households whose net income drops by 25 percent or more depending on the source of the income loss. Consider first households where the household head remains in full-time employment. In Denmark and Germany, the share of households whose income drops because of job-to-job switches, part-time work, or other reasons for earnings fluctuation remained relatively stable at around seven and ten percent, respectively. In the U.S., by contrast, the volatility of incomes of households where the head remains employed has doubled from ten percent in the late-1980s to almost 20 percent in 2010. One explanation for this strong increase in the share of households that are affected by employment-driven income losses is the growth in shorter or irregular work hours and more frequent job-to-job switches in the U.S. (see Golden 2015). In Denmark and the U.S., the share of households experiencing income losses because of involuntary employment disruptions, including unemployment and sickness, has almost doubled since the late-1980s and rose to 20 and 40 percent, respectively. In Germany, by contrast, the number of households affected by income losses caused by involuntary employment disruptions has slightly declined. The financial burden of deliberate life-course choices such as time off work for education and child-related reasons affects even more households in Denmark and the U.S.\textsuperscript{30} In all three countries, life-course choices that result in income losses affect more households since the late-1980s, and in the case of Germany and the U.S. have grown even stronger than income losses caused by involuntary employment disruption.

Panel (b) shows the average size of the financial burden for households that experience one of the three sources of income loss. Life-course choices impose the largest costs on households in all countries, followed by involuntary employment disruption and employment-related losses. Income losses caused by life-course choices have grown since the late-1990s from around 60 percent to around 70\% for Danish households and to around 65 percent for German households—after a period of declining losses in the 1990s. Even more strikingly, while American households lost around 60 percent of their incomes to life-course choices in the late-1980s, this number has grown considerably until the mid-2000s to around 100 percent. To give an example, this amounts to a hypothetical decline from annual income of $60,000 to $20,000.\textsuperscript{31} In Denmark and Germany, income losses related to employment fluctuations have remained fairly stable, while losses caused by involuntary employment disruptions have slightly declined in Denmark and slightly increased in Germany. For American households,

\textsuperscript{30}The country-specific datasets do not allow me to distinguish with exact certainty whether disruptions in employment patterns and life-course trajectories are involuntary or deliberate. The cross-national classification scheme is shown in Table A.2.1 in the Appendix.

\textsuperscript{31}Based on the arc percentage change formula in equation 2.1.
Figure 2.20: Net Income Volatility By Source of Income Loss

(a) Share of Households with 25% Income Loss or More

(b) Average Income Loss Among Households with 25% Income Loss or More

Notes: Panel (a): the dots show the annual share of households that experience an annual income loss of 25 percent or more for different sources of income loss. Panel (b): the dots show the average household income loss (negative values), defined as the annual percentage change in income, for all households that experience a drop in income of 25 percent or greater from one year to another for different sources of income loss. The lines in both panels are fitted locally-smoothed polynomials. *Involuntary employment disruptions* include unemployment, sickness, and disability. *Life-course choices* include education (student and re-training), various forms of leaves such as family leave, and homemaking. The employment status of the household is based on the status of the household head. For details see Table A.2.1 in the Appendix. Note that in the German case, mini and midi jobs are classified as involuntary employment disruptions. The graphs for the U.S. and Germany use survey sampling weights; the graphs for Denmark are based on the entire population. *Sources:* PSID (USA), SOEP (Germany), and administrative records (Denmark).
by contrast, employment-related income volatility such as shorter or fluctuating work hours and more frequent job-to-job switches as well as involuntary employment disruptions such as unemployment or sickness leave significant financial gaps and have turned into growing financial burden since the late-1980s.

Together, the panels in Figure 2.20 suggest that life-course choices are financially consequential from a macro-perspective because they affect a large share of households as well as from a micro-level perspective because for individual households the financial burden of such income loss has grown considerably. In Denmark but particularly in the U.S., more households experience larger income losses. In Germany, involuntary income losses, largely caused by unemployment, are more important both in terms of the numbers of affected households and, at least during the 2000s, in terms of the size of the financial burden.\(^\text{32}\)

This chapter provided a macro-level perspective on social policy shortfalls in Denmark, the U.S., and Germany and offered a glimpse into the variation of income volatility across households within these countries. Fragmented employment patterns and segmented life-course trajectories, artifacts of the shifts from Fordism to flexible knowledge economies, have increased the financial burden that many households have to shoulder. Earnings have become more volatile and expenses have increased, while social policies no longer provide financial support as they once did. In this context, credit markets begin to fill the gap between households’ financial needs and welfare states’ financial support. As I will show in Chapters 4 and 5, households increasingly go into debt to pay for basic social services and to cover income losses that in many cases used to be provided or addressed by traditional social programs. But to understand the cross-national variation in the extent to which credit markets have become private alternatives to social policies, we need to know more about the specific credit regimes that make borrowing more or less permissive. This is the focus of the following chapter.

\(^{32}\text{Figure A.2.2 in the Appendix combines both panels by weighting the average size of income loss by the share of households experiencing such income loss.}\)
Chapter 3
Credit Regimes and Household Debt

The growth of the financial sector and the expansion of consumer credit markets across many OECD countries has contributed to rising levels of indebtedness and, not least because of the financial crisis of 2007, motivated scholarly attention.¹ The dominance of financial markets appears to be an almost global and uniform force, but the domestic regulation of credit markets, the availability of specific financial products, and the ease of access to loans vary considerably across countries. While financial markets have deeply and systematically influenced and altered the lives of many if not most Americans (see Fligstein and Goldstein 2015; Langley 2008), the experience of households in other countries is quite different. Danish and American households for most of the past few decades had much easier access to credit markets and a broad range of financial products than their German counterparts. Credit cards are ubiquitous in the Anglo-Saxon world but noticeably absent in Germany’s cash-based economy.

In this chapter, I focus on the importance of credit markets for households and argue that the reason why we see differential access to credit across countries depends on what I call credit regimes. By credit regime, I mean the institutional bonds and supporting policies (especially regulatory and fiscal policies) that make it more likely the credit flows are channeled either toward households or away from them. This conceptualization and focus differ from other work on financialization by adopting a households’ perspective, highlighting how credit flows to specific groups in society rather than studying levels or intensity of aggregate financial flows from one country to another. From a households’ perspective, these credit regimes can be permissive, allowing households to easily tap into credit markets to borrow money, or restrictive, making access to credit much harder. I argue that these credit regimes are exogenous and orthogonal to political choices regarding social and labor market policies.

¹See, for example, Carruthers and Kim (2011); Fligstein and Goldstein (2015); Krippner (2011); van der Zwan (2014).
As I will explain below, the rise of credit as a private alternative to the welfare state and the cross-national variation in this relationship is the unintended consequence of path-dependent decisions and complementarities of the financial sector and credit markets (see also Krippner 2011).

This chapter is not meant to explain exhaustively the origins of these credit regimes and instead offers a typology of credit regimes and the factors that make these regimes more or less permissive. These factors, which include the institutional bonds between banks, households, and firms, the policy environment, and the political coalitions that create and sustain them, have their roots in the postwar years and share high degrees of path dependency. I then add a descriptive account that provides evidence that Denmark and the U.S. are permissive credit regimes and that Germany is a restrictive credit regime. This in turn allows us to understand why households living in permissive credit regimes have easier access to credit and can borrow money to pay for basic social services and invest in education, children, or time-off work in light of social policy shortfalls.

In the following, I first describe different approaches to explain differences in cross-national structures of financial markets. I then introduce the concept of credit regimes, emphasizing how institutional bonds and policy choices make it more likely that credit is channeled toward the household sector. Next, I demonstrate that credit flows differ considerably across countries before providing in-depth accounts of the origins and developments of credit regimes in Denmark, the US, and Germany. Finally, I show that these credit regimes influence how easily households can borrow as well as the distribution of household debt within countries.

### 3.1 Cross-National Differences in Financial Market Structures

What accounts for cross-national differences in the structure of financial markets? Gerschenkron (1962) was among the first to shed light on this question, arguing that economic factors determine the structure of financial markets. For “moderately backward” economies such Germany in the late-19th century, the capital requirements of these late industrializers pushed banks to the forefront as they were institutionally able to mobilize large amounts of capital to finance industrial activity. Bank-based systems such as Germany’s allowed its universal banks to develop close ties with industrial firms and meet their financial needs,
whereas market-based systems like the U.K.’s at that time were less conducive to such close relationships (see also Allen and Gale 2000; Zysman 1983).

While influential for decades, the explanatory power of economic backwardness as a direct or at least proximate cause of financial development has been called into question since backwardness may not be the cause but rather the consequence of muted financial development. Rather than focusing on economic conditions, others have argued that legal and political factors directly influence the development and structures of financial systems. Regulatory policies can directly influence the relative importance of bank or financial markets. During the twentieth century, government regulation in Germany promoted and protected large universal banks while suppressing the development of securities markets, whereas regulatory limits on banking operations in the U.S. had the opposite effect and spurred the growth of financial markets (Dietl 1998; Fohlin 2007). A different line of arguments suggests that the protection of rights of shareholders and minority investors can influence financial structures. Weak investor protection, either de jure or de facto, tend to suppress the development of arm’s length markets and instead foster relationship banking practices that allow banks to monitor firms, exercise control, and protect investors’ interests. In seminal work, La Porta, Lopez-De-Silanes and Shleifer (1999) and La Porta et al. (1997) tied minority investor protection to legal traditions and argued that countries with a Common Law origin such as the U.S. or the U.K. have better minority investor protection and more highly developed capital markets, whereas French civil law systems tend to have weaker investor protection, weakly-developed capital markets, and more concentrated ownership. The legal families of countries then shape corporate governance practices.

The long arm of the colonial era may certainly shape legal traditions, but present-day regulatory environments and the enactment of laws are beyond its reach and in most cases endogenous to legal and political conditions since policymakers can change the law if they chose to do so. Rajan and Zingales (2003) show that contrary to La Porta, Lopez-De-Silanes and Shleifer (1999), countries with Common Law systems were not more financially developed in 1913, suggesting that structural theories such as those in the legal tradition are incomplete. Instead, they offer a political economy argument of financial development. Incumbents with vested interests in the financial and business sector will be hostile to stronger arm’s length markets because these markets breed competition. The ability of incumbents to fight financial development will be muted, however, when trade and capital flows can easily cross borders. In a similar vein, Calomiris and Haber (2014) argue that the structure of a country’s financial regime—or, specifically, a banking regime understood as a partnership
between governments and private actors—is the outcome of a political “game of bank bargain” between banks and governments. This “game” is about the delicate balance between governments’ conflicting interests vis-a-vis banks. Governments not only supervise and regulate banks and enforce credit contracts but also depend on banks as powerful financial and political supporters. The results depend on how powerful these interests are, whether governments can credibly commit to abide by their agreements, and what coalitions emerge as a result of that. For example, one implication of their argument is that nationally-centralized banking policy in Canada was less amenable to local rent-seeking than decentralized banking policy in the U.S., where historically states held jurisdictional powers. The degree of political centralization also plays a role in Verdier’s (2002) argument about the structure of financial markets. Yet his logic works less through local rent-seeking than through the segmentation of deposit markets and central banks as providers of emergency liquidity. Centralized institutions empower financial centers that deprive peripheral local economies of their financial resources and leave behind aggrieved local constituencies, including borrowers and lenders. When political centralization was strong enough to create a strong central bank that could function as a lender-of-last-resort but at the same time limited to allow secondary banks and segmented deposit markets in the economic periphery, universal banking arose.

A final set of arguments emphasizes electoral politics as a force shaping corporate governance structures. In this view, firms have to strike a balance of power between their own interests and those of their investors and employees, weaker investor protection often goes together with stronger employment protection, and vice versa Gourevitch and Shinn (2005); Pagano and Volpin (2005). When ownership is concentrated, firms want low investor protection to extract larger rents from private control of their company and buy support from workers in exchange for stronger job security (stakeholder model). When ownership is dispersed, firms favor stronger shareholder protection to appease minority investors at the expense of weaker employment protection (shareholder model). In Pagano and Volpin’s (2005) argument, the stakeholder model is politically supported in proportional electoral systems where parties cater toward the preferences of social groups with homogeneous preferences, that is, entrepreneurs and employees, whereas the shareholder model arises in majoritarian electoral systems where competition is not based on ideology but on winning pivotal districts. Roe (2003) expands this logic to party politics, suggesting that social democratic coalitions tend to protect the interests of workers through co-determination of employment protection laws and appease owners by granting them larger shareholdings to counter pressures from
workers in order to stabilize employment and focus on growth. This stifles the development of equity markets and promotes stakeholder models of governance.

3.2 Conceptualizing Credit Regimes

Arguments about the relative influence of legal and regulatory policies and the interests of organized groups in shaping structures of financial markets have advanced our understanding of cross-national differences. Yet many accounts fall short on one important dimension: the degrees to which these structural differences influence how easily households can borrow money. Such a household perspective on credit market is important because it helps us understand why financialization has been a dominant social force in some countries and a rather muted one in others. It also reveals that the structure of financial markets, even in cases where their primary target is the business sector, has downstream consequences for the financial well-being of households and the overall economy.

In this section, I offer an analytical framework that builds on these political economy models of financial market structures but incorporates households and their ability to tap into credit markets. I argue that the structure of what I call a credit regime influences whether credit flows are directed towards households or away from them. Credit regimes refer to the institutional bonds between banks, businesses, and households, as well as the policies that create and sustain these bonds.

3.2.1 Typology of Credit Regimes

In the broadest sense, credit regimes can either be permissive and channel financial flows toward households (and away from other sectors of the economy) or restrictive and channel financial flows away from households (and toward other sectors of the economy). What makes credit regimes permissive or restrictive is the interaction of three factors: first, the institutional bonds between banks, business, and households; second, the regulatory and fiscal policy environment, and, third, the political coalitions that sustain both institutions and policies. I discuss each of them in turn.

Institutional Complementarities

Institutional bonds that form either between banks and the business sector or between banks and households are a core driver of credit flows in the economy. The corporate governance structure of firms and their financial needs significantly shape these bonds with the structure
of the banking system. In cases where non-market relationships and relational contracting is the norm and ownership of firms is concentrated, banks have developed close ties with firms to fund their business activities. These arrangements are typically found in coordinated market economies with network-based monitoring and information exchange (Hall and Soskice 2001). Banks play a critical role in this system because they operate as a firm’s “house bank” and provide long-term, so-called patient capital. These long-term commitments are made possible because banks are able to closely monitor the business activities of their borrowers, either through informal ties or formal cross-holdings (Cioffi 2006). The corporate governance model of firms and the institutional underpinnings of their relationship with banks have downstream consequences for other segments of financial markets, in particular mortgage markets and pension systems (Langley 2008). Since strong lending ties between banks and businesses push credit flows toward firms, mortgage markets tend to be suppressed and pension systems oriented toward defined-benefits since capital market, necessary for such investments, are not deep. Because of these close ties between banks and the business sector, the credit regime that emerges is restrictive because it channels credit away from households.

By contrast, in cases where hierarchical and competitive market arrangements as well as formal contracting prevail and ownership of firms is dispersed, close relationships and cross-holdings between banks and businesses are rare. Instead, arm’s length financial markets underpin corporate governance models and satisfy firms’ funding requirements. Equity and bond markets or other types of non-bank investors provide sufficient capital and replace the need for banks as business lenders (Hall and Soskice 2001). Banks turn to households as alternative sources of potential borrowers, and institutional bonds emerge instead between banks and households. As before, the ties between banks and households have downstream consequences for the structure of mortgage markets and pension systems. Since businesses tend to fund themselves through equity or bond markets, banks and other lenders turn to household-related capital markets as alternative sources of lending activities. Highly-developed and liquid mortgage markets and capitalized defined-contribution pension systems based on individuals’ investment in private pension savings funds emerge as a result of abundant capital flows and credit that are not tied up in business lending. The resulting credit regime is permissive because it tends to channel credit towards the household sector.

Policy Environment

Such institutional bonds do not arise in a vacuum. Governments play a crucial role in creating, promoting, and sustaining these institutional bonds through various policy choices
that reflect governments’ own agendas to respond to changing economic circumstances as much as the interests of the business sector, the banking sector, and households.

Regulatory and fiscal policies are the key tools through which governments incentivize households to save and steer credit away from them and toward the business sector or, alternatively, steer credit towards households and incentivize them to borrow. Governments can directly influence credit flows by restricting international cross-border capital flows, rationing domestic credit, and tightening bank lending conditions by imposing credit and interest ceilings. Monetary policy is the primary lever that influences the overall cost of credit in the economy. With the Bank of England formally gaining independence in 1997, all central banks in Western Europe and North America were able to set their own monetary policies within the framework of their respective mandates. Even though central banks are no longer under the influence of their governments, loose monetary policies and extremely low interest rates during the late-1990s and 2000s have contributed to the global rise in household debt (Krippner 2011; Schularick and Taylor 2012). Governments also indirectly shape lending activities by regulating the risk of granting loans, for example through collateral requirements and loan-to-value (LTV) ratios and rules about securitization practices. Collateral requirements, for example, determine how much individuals can borrow relative to the value of the underlying collateral asset. Higher LTVs make lending riskier because households with limited assets are more likely to get loans while lenders have fewer assets they can seize when borrowers default. The securitization of loans, for example through asset- or mortgage-backed securities, is an influential practice that allows lenders to disperse their credit risk by pooling illiquid debt contracts into securities whose tranches can be sold to other investors. This frees up resources on lenders’ balance sheets and is perceived to reduce the overall lending risk, thereby allowing lenders to issue more loans overall.2 Finally, governments can regulate what types of financial products are available and who can offer them. Some countries allow individuals to take out deferred-amortization loans (also know as “interest-only loans”) and home equity loans or home equity lines of credit, while such practices are banned in others.3 Government themselves can subsidize or guarantee loans for borrowers with higher default risks such as students. These are examples of financial

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2In light of excessive securitization, particularly in the U.S. and the U.K., that contributed to the surge in subprime loans and the financial crisis, a more skeptical emphasizing the distortionary effects of securitization has emerged (see, for example, Mian and Sufi 2009; Shin 2009).

3Deferred-amortization loans are loans, typically mortgages, where the borrower only pays the interest on the principal balance for a fixed period of time. Afterward, the principal balance will be amortized. Home equity loans or home equity lines of credit are loans where the borrower uses the value of the house as collateral for loans.
products that improve overall access to credit by reducing costs and increasing the pool of assets that can serve as collateral.

Fiscal policies, in particular tax expenditures, are yet another important policy lever that can incentivize households to save or, alternatively, to go into debt. Some governments allow for substantial deductions of interest payments from individuals' tax liability. In many countries, tax provisions give preferential treatment to mortgages and related interest payments as part of a broader government intervention to encourage homeownership. In combination with collateralized borrowing, for example in the form of home equity loans, these policy choices make it more likely that credit flows are directed toward households (Poterba 2002). But alleviating credit constraints of individuals also reduces savings rates because households can tap into credit markets more easily (Jappelli and Pagano 1994). Fiscal policies that favor borrowing over saving may amplify this behavior and make households less likely to build up a financial cushion in the form of savings and more likely to take on debt instead. Alternatively, governments can incentivize households to save, for example through tax-free savings accounts or contractual savings plans with regular payments matched by the government.

In sum, regulatory and fiscal policies can steer credit flows toward households by reducing banks' risk of lending to households, by making it easier and cheaper for households to access credit markets, and by incentivizing households to go into debt. These policy choices are orthogonal to considerations about social and labor market policies.

Political Coalitions

The final element of credit regimes is the set of policy choices that create and support strategic interactions and the bonds among key actors, all within the institutional constraints that define what is politically viable. Specific types of political coalitions then drive and sustain each credit regime. In restrictive credit regimes, the institutional bonds are driven less by electoral politics and more by “quiet politics” between parties and organized interests as “intense policy demanders” (Bawn et al. 2012; Culpepper 2011). Voters' preferences play a minor role because they rarely affect corporate governance issues, including the structures of how firms finance themselves. The banking and business sectors share similar interests in maintaining and protecting the patient-capital character of their relationship and form a political coalition to ensure that credit flows are directed toward the business sector.

In permissive credit regimes, by contrast, the absence of a patient capital system that would tie banks and business together results in a different political logic. Businesses depend
on liquid equity and bond markets while banks target households for their lending activities. Households themselves are market-participants because they have invested in the stock markets, for example through pension funds or other capitalized savings plans (Davis 2009; Fligstein and Goldstein 2015), mortgage markets (Ansell 2014; Schelkle 2012), or credit markets for personal or educational loans (Eaton et al. 2016). In this case, a political coalition between banks and households emerges that is invested in pro-credit policies and aims to direct credit flows toward the household sector.

The institutional bonds between banks, businesses, or households give rise to two distinct credit regimes that are sustained by specific policies and political coalitions. Table 3.1 summarizes the different features of the two ideal-types of credit regimes. In the following section, I show how both types of credit regimes influence the distribution of credit between households and businesses.

Table 3.1: Typology of Credit Regimes

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<th>Restrictive</th>
<th>Permissive</th>
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<td>Institutional</td>
<td>Ties between banks and business</td>
<td>Ties between banks and households</td>
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<tr>
<td>bonds</td>
<td>Firms rely on banks for long-term patient capital</td>
<td>Firms rely on capital markets and non-bank investors for funding</td>
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<td></td>
<td>Weak mortgage markets and defined-benefit pension system</td>
<td>Deep mortgage markets and defined-contribution pension system</td>
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<tr>
<td>Policy</td>
<td>Saving is incentivized through regulatory and fiscal policies</td>
<td>Borrowing is incentivized through regulatory and fiscal policies</td>
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<td>environment</td>
<td>Limited range of financial products for households</td>
<td>Broad range of financial products for households</td>
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<td></td>
<td>Restrictive regulatory policies</td>
<td>Permissive regulatory policies</td>
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<tr>
<td>Political logic</td>
<td>Banks and business coalesce</td>
<td>Banks and households coalesce</td>
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3.2.2 Financial Liberalization and Credit Flows

During the 1980s and early 1990s, many OECD countries began to liberalize their domestic financial markets (Debelle 2004; Kaminsky and Schmukler 2008). Restrictions on international capital flows were lifted during that time, allowing banks to directly access global capital markets and thereby freeing them from the constraints of only relying on domestic capital (Cohen 1996; Simmons and Elkins 2004). For most countries, the increase in cross-border capital flows resulted in a considerable domestic credit expansion and growing
competition as more banks and other lenders entered credit markets. The deregulation of financial markets and banking services went furthest in the Anglo-Saxon countries and, albeit to a lesser degree, the Nordics. Figure 3.1 plots the IMF Financial Liberalization Index for a set of OECD countries over the period from 1975 to 2005. Values of zero indicate completely closed financial systems, values of one completely liberalized systems. While there is a clear trend toward more liberalized financial system across the OECD world, even in the 2000s there was still considerable variation across countries. In 2005, the most recent year where data is available, both Denmark and the U.S. had a fully liberalized financial system (scores of one), while Germany had a score of 0.9—even below the OECD average of 0.94 in that year.

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4 On the well-documented link between cross-border capital flows and credit expansion see, among others, Jordà, Schularick and Taylor (2013); Lane and McQuade (2014); Mendoza and Terrones (2012); Schularick and Taylor (2012).

5 For details about this index see Abiad, Detragiache and Tressel (2008).
The financial liberalization index indicates, among other aspects, how easily international capital can flow into countries. Yet it masks which segments of the economy benefit most from financial flows in general and bank credit in particular. The panels in Figure 3.2 reveal crucial differences between total credit in the economy and the recipients of credit flows, averaged over the period from 1994 to 2005. Panel (a) shows the total bank credit in the economy that goes toward the business sector as a share of GDP. In Japan, credit to businesses makes up an average of 107% of GDP, while in Lithuania, the U.S., and Denmark bank credit to business accounts for less than 13% of GDP. But the structure of credit regimes only becomes visible once we disaggregate bank credit flows by recipient sector. Panel (b) plots the relative share of credit that flows toward households and businesses. Countries like the U.S., Canada, and Denmark stand out as channeling 75% and more of all bank credit toward households. In Germany, by contrast, less than half of that share (38%) goes toward households while almost two-thirds of credit flows go toward the business sector. The extent to which the business sector soaks up credit flows matters for the credit resources available to households. In the next section, I describe the credit regimes of Denmark, the U.S., and Germany in more detail.
3.3 Credit Regimes of Denmark, the U.S., and Germany

3.3.1 The Danish Credit Regime

During the last two decades, Danish households have gained easier access to credit and, over the same time period, became more and more indebted. In the following parts, I document how Denmark has turned into a permissive credit regime. Up until the 1980s, the Danish financial system was heavily regulated. Capital flows into the country were heavily restricted and financial authorities imposed direct credit limits on the amounts banks could loan out as well on lending and deposit rates banks could charge. Restrictions on cross-border portfolio investments and capital account credit transactions were lifted in the late 1970s and 1980s and led to a strong growth in capital flows. Domestically, the conservative government began to dismantle lending ceilings for mortgage credit institutions and banks in the early 1980s. In 1982, the government abolished the regulatory separation of the businesses of insurance companies, pension funds, and banks and granted Danish financial institutions direct access to global capital markets. Over the course of the following decades, commercial lending by residents and non-residents increased considerably.

Denmark opened its cross-border capital flows at a time when many OECD countries liberalized their capital account (Simmons and Elkins 2004). As a small, open trading nation, Denmark’s export-oriented firms favored access to global capital markets to finance business activities (cf. Katzenstein 1985). Yet financial liberalization not only reflected the interested of firms and banks that depended on international capital markets. Governments of different political stripes all showed interest in financial markets deregulation and lifted various restrictions on credit flows. This all occurred with the explicit goal to stimulate the economy in times of stagnation and recessions (Abildgren 2007). The strong increase in bank lending since the 1980s, however, was not matched by an offsetting growth in banks’ equity, thus increasing banks’ leverage and exposure to fluctuations in international financial markets. In the 2000s, Danish banks had amassed such large deposit deficits that they had to issue bonds and draw on capital from foreign banks and international capital and money markets to finance their deficit (Abildgren, Andersen and Thomsen 2010, ch. 4). Much like

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the United States, the Danish financial system took in foreign capital and recycled it into credit toward consumers.\textsuperscript{7}

The Danish case also highlights the limits of the dichotomy between liberal and coordinated market economies advanced by the Varieties of Capitalism approach (Hall and Soskice 2001). In the realm of finance, Denmark resembles the liberal Anglo-Saxon economies much more closely even though the institutional configuration of other parts of the economy, most notably the welfare state, are still much closer to coordinated economies or, in Esping-Andersen's (1999) classification, Social-Democratic welfare regimes.

**Institutional Complementarities**

The Danish banking sector has forged closer ties with households because of lacking institutional bonds with the business sector. Large firms tend to rely on equity and bond markets for capital, whereas small- and medium-sized enterprises (SMEs) draw on foundations as "patient owners" for funding.\textsuperscript{8} Strong ties between banks and firms as they are common in Japan or Germany were formally prohibited in the aftermath of a deep banking crisis by the Banking Act of 1930 (Rose and Mejer 2003). In the 1960s, when manufacturing exports for the first time exceeded agricultural exports, the growing capital demands of the expanding manufacturing sector were stifled because traditional sectors such as farmers, agrarian export industries, and other sheltered sectors had a much stronger political representation than the export-oriented manufacturing sector. More importantly, the legal prohibition and thus absence of strong linkages between finance and industry present in Sweden at that time meant that Danish firms had to turn to international capital markets for financing (Marcussen 1997). After another banking crisis in the late 1980s, a wave of mergers among banks but also across sectors such savings and commercial banks, mortgage institutions, and insurance companies considerably reduced the number of lenders in Denmark and strengthened the power of the remaining players (Woll 2014, ch. 7). The historical legacy of the absence of formal ties between banks and business, the late industrialization and turn of manufacturing exporters to international financial markets, and the importance of foundations in providing patient capital limited banks' role in funding firms' activities and instead allowed them to direct credit flows toward the household sector.

The institutional bonds between banks and households further shape the depth and

\textsuperscript{7}On the well-documented links between international capital flows and domestic credit expansion see Jordà, Schularick and Taylor (2013); Lane and McQuade (2014); Mendoza and Terrones (2012); Shin (2012).

\textsuperscript{8}In 1999, almost 20% of Denmark's 100 largest companies were in majority ownership by a foundation such as Carlsberg, A.P. Moeller, Novo Nordisk, or Lundbeck, among others (Rose and Mejer 2003).
liquidity of mortgage markets and the type of pension systems as additional sources of lending and investment activities. First, Denmark has an easily-accessible mortgage finance systems with a high degree of securitization through covered bonds, the world’s largest market both in absolute and relative size (Andersen et al. 2015). Second, Denmark operates a multi-pillar pension system consisting of limited government-provided defined benefit plans with flat-rate minimum benefits and fully capital-funded private defined-contribution plans through employers or individual retirement accounts. This pension system depends on deep and liquid financial markets as sources of investment in private pension funds (Bonoli 2003).

In sum, banks and other private lenders channel credit flows toward the household sector, thereby providing households with easy access to credit and strengthening mortgage markets and capital-based pension funds.

Policy Environment

The institutional structure that ties banks and households together through financial flows is facilitated and sustained politically through a range of policies that incentivize households to become market participants and to go into debt rather than to save. These policies were in many cases implemented as part of a larger demand-side policy approach, driven by consumption and fueled by debt (Campbell and Pedersen 2007; Kjaer and Pedersen 2001).

The most consequential regulatory policy choices occurred in mortgage markets. By the mid-1980s, the Danish government had already liberalized and deregulated the market for housing finance and mortgages. Today, the Danish mortgage market is one of the most liquid ones in the OECD. Regulatory policies limit the maximum loan-to-value ratio in Denmark to 80%, and the remaining 20% typically come from regular bank loans. Through a set of legal changes, the government further eased access to credit over the course of the last decades. In 1992, the government allowed homeowners to use housing equity as collateral for loans for purposes other than financing property. The limit for these loans was set to 80% of the house value. The main impetus for the home equity reform was a demand-side and consumption-driven economic stimulus in response to the economic recession of the early 1990s (see Jensen, Leth-Petersen and Nanda 2014; Leth-Petersen 2010). In 1996, the government enabled lenders to issue variable-rate mortgage loans, which quickly began to

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9 Covered bonds are obligations of mortgage lenders that are collateralized by pools of mortgages. The Danish Mortgage Credit Act sets the regulatory framework for the mortgage market and stipulates in the “balance principle” that each new mortgage liability, i.e. issued mortgage loans, have to be funded by mortgage bonds that match the underlying liability in cash flow and maturity. In other words, inflows and outflows of mortgage-originating banks must match, thus, together with strict lending rules, limiting banks’ risk exposure. For more details on the Danish mortgage system see Andersen et al. (2015); IMF (2007).
replace fixed-rate mortgage loans that had provided planning certainty for both lenders and borrowers. Between 1999 and 2009, the share of mortgages with adjustable rates increased from 5% to 65% of the total lending volume as households took advantage of falling interest rates and began to refinance existing mortgage loans. In 2003, the government made credit even more readily available and cheaper by allowing banks to offer deferred amortization loans, so-called “interest-only” loans, where borrowers at first pay the interest on a loan for a specified period of time, typically up to 10 years, and only thereafter start to repay the principal. For such loans, debt repayment appears to be light during the interest-only period but increases considerably once the principal needs to be amortized. This regulatory policy environment proves conducive to channel credit toward the household sector.

Lastly, fiscal policies further incentivize households to make use of easily available credit, in particular for mortgage-financed homeownership. The mortgage interest deduction from taxable income has been gradually lowered from 46% in the 1990s to 33% in the 2000s but, as of 2009, is still the third-most generous interest-related tax deduction across the OECD after the Netherlands and the Czech Republic (Andrews, Caldera Sánchez and Johansson 2011, p. 40). In 2001, the conservative government initiated a property tax freeze, which fixed the taxable property value at its assessed level in 2001. This paved the way for a sizable growth in credit as the tax freeze effectively prevented rising house prices from translating into higher tax payments. The tax freeze favored existing homeowners that could reap the benefits of rising asset values and take out home equity loans without paying additional taxes on the property value (Mortensen and Seabrooke 2008). Unlike Germany, Denmark does not offer fiscal incentives for contractual savings (other than pension funds)—I point I will return to below.

Political Coalitions

The Danish business and banking sectors both have interests in open capital flows and access to international capital markets, albeit for different reasons. Firms, especially export-oriented manufacturing companies, depend on global capital markets as a primary source of funding. Banks also tap into capital markets to finance their lending activities to households. But unlike German banks, which can draw on the deposits of their savors, Danish banks have experienced growing deposit deficits and need international financial markets as crucial sources of liquidity.

Danish households themselves have become market participants, for example in their role as homeowners with mortgages, as shareholders in pension funds, or as creditors with
personal loans owed to banks. The “finance culture” that Fligstein and Goldstein (2015) have diagnosed among American households is also on the rise among Danish households. The regulatory and fiscal policies that promoted easy access to credit helped to increase household debt levels while also creating political constituencies with vested interests in pro-credit policies. The coalition of homeowners and middle- and higher-income households that use credit to much larger degrees than lower-income families has become a politically powerful constituency and is increasingly targeted by political parties.\textsuperscript{10} In 2005, the Socialist People’s Party (Socialistisk Folkeparti, or SF) and the Red-Green Alliance (Enhedslisten) almost fell prey to the anger of this coalition when they began to contemplate increasing the property tax rate and reducing property sales costs. Just one day before the national election in 2007, SF reversed its electoral stances regarding the proposed property tax increase because they feared electoral punishment at the ballot box. In the next day’s election, SF gained more power and bolstered the leadership under the conservative-liberal Venstre party. The election results were widely interpreted as a sign that any increases in property taxes are politically not feasible (Mortensen and Seabrooke 2008, p. 313). Based on Denmark’s institutional bonds, its policy environment, and the supporting coalitional structures, I therefore classify Denmark as a case of a permissive credit regime.

3.3.2 The United States’ Credit Regime

American households can relatively easily tap into a deep and liquid credit market. One of the reasons for such easy access to credit, as I will document below, is the permissiveness of the U.S.’s credit regime and its orientation toward households. The U.S. is often characterized as a market-based financial system in which financial markets, in particular securities markets, are on par with if not more important than banks in allocating capital, mobilizing savings, and exerting corporate control (Zysman 1983). In 1974, the U.S. was the first country to dismantle capital controls. The goal was to promote a more liberal financial system that would allow the U.S. to preserve their policy autonomy and to tap into international capital markets to finance their current account deficit (Helleiner 1995; Simmons 1999). The deregulation of financial markets and the growth of the US dollar as the leading reserve currency led to strong capital inflows into the U.S. Households were among the main beneficiaries of growing credit flows as consumer lending shifted from being a simple means

\textsuperscript{10}Interview with regulators from the Danish Financial Supervisory Authority (Finanstilsynet) on September 15, 2016.
to facilitate purchases to a profitable end in itself. By the 1980s, most banks had reoriented their business activities to household lending (Hyman 2011, ch. 7).

Institutional Complementarities

In the postwar years, U.S. manufacturing was characterized by vertically-integrated firms and a Fordist production regime. Corporate governance was based on a stakeholder model with managerial dominance, high levels of unionized workers, and tightly regulated markets. Yet during the 1980s, corporate governance shifted toward the shareholder model and firms began to turn to markets to finance their business activities. By the 1990s, deregulated financial and labor markets and shareholder-value corporate governance had formed a close institutional alliance (Deeg 2014; O’Sullivan 2000). The increasing availability of market-based funding sources to businesses meant that commercial banks in the U.S. lost much of the primary market for loan origination and had to reorient their lending activities toward households.

America’s deep and liquid financial market is well suited for a highly developed mortgage market as well as a capitalized pension system with defined contributions. Already in response to the Great Depression, the federal government had begun to intervene in the housing finance market and created the Home Owner’s Loan Corporation (HOLC), the Federal Housing Administration (FHA) and the Federal National Mortgage Association (FNMA, or Fannie Mae). The FHA offered mortgage insurance that made it less risky for investors to purchase mortgage bonds, while Fannie Mae created a liquid secondary market for mortgage loans, which enabled lenders to issue more loans at lower cost. The creation of the government-sponsored enterprises (GSEs) Ginnie Mae and Freddie Mac under the Housing and Urban Development Act of 1968 consolidated the flourishing secondary market for FHA mortgages. Freddie Mac securitized mortgages and Ginnie Mae provided mortgage insurance through government-backed guarantee, thus further fueling the growth of mortgage markets (Green and Wachter 2005). In a similar turn toward financial markets, the U.S. pension system began to increasingly rely on privately-managed financial investment accounts such as 401(k) defined-contribution plans, which in turn depend on liquid financial markets for pension funds to invest their assets. By contrast, Social Security, a state insurance scheme, only provides for a relatively low income in retirement in comparison to other PAYGO pension arrangements in Europe (Langley 2008, ch. 3).

In sum, both mortgage markets and capitalized pension funds are geared toward households. As firms cover a large share of their funding needs through capital markets, banks lend
to businesses to much smaller degrees. The total lending to the business sector amounted to only about 15% of GDP, on average, over the period from 1994 to 2005—the second-lowest value in the OECD. On the flipside, banks lend to much larger degrees to households. Over the same period, an average of over 70% of all bank credit in the economy went towards the household sector (cf. Figure 3.2 above).

Policy Environment

Regulatory and fiscal policies play an important role in creating and sustaining the U.S. credit regime. Consumer credit has a long history and was embraced much earlier than in other countries.11 Already in the 1950s, at the height of tight regulation of small loans, consumer borrowing saw a rapid expansion. During the 1960s and 1970s, politically-progressive groups became concerned about social inclusion and access to credit for previously excluded groups such as women and minorities, particularly poor, urban African Americans. Joined by the National Welfare Rights Organization, they began to push for greater availability of credit under the umbrella of “economic citizenship” as a way to turn the question of access to credit into one of economic rights instead of economic welfare (Trumbull 2014, ch. 2). Those efforts culminated in 1974 in the Equal Credit Opportunity Act, which paved the road to tackle discriminatory practices in lending markets.

The early rise in bank lending, particularly in card markets, resulted in large parts from attempts to strengthen oversight of financial institutions, to drive out loan sharks, and, as mentioned above, to improve the ability of all societal groups to get loans on the basis of social justice (Hyman 2011). By the 1970s, access to credit was perceived as an economic right for all Americans (Logemann 2012). Federal Reserve board member Mark Olson, remarking on financial market deregulation and the growth of financial products in, portrayed these developments as the “democratization of credit.”12 A wave of deregulatory decisions in the 1980s and 1990s made consumer credit even more easily available. Usury laws were famously stripped away by the Supreme Court Marquette Ruling of 1978, which eliminated state usury levels on unsecured loans. Interest rate controls under Regulation Q were phased out in the early 1980s under the Depository Institutions Deregulation Act of 1980.13 Loan markets, previously dominated by a few institutions, were liberalized and saw the entry of a variety of financial institutions. U.S. states lost a large part of their powers to regulate financial

11 For historical accounts of consumer credit in the U.S. see, for example, Hyman (2011); Trumbull (2014).
13 For more details financial market deregulation in the U.S. see, for example, Krippner (2011).
products by out-of-state firms (McCarty et al. 2010). And lending standards and credit requirements were relaxed considerably, making more households eligible for credit cards and consumer loans. In combination with a significant increase in credit card limits and better techniques regarding risk-based pricing and credit scoring, consumer debt grew tremendously during the last decades (Wolff 2012).

Mortgage markets expanded similarly during this period, aided by several regulatory and product-level innovations. As mortgages began to be funded by capital markets rather than by savers' deposits, securitization practices became more common and amplified the growth of long-term residential mortgages. The standardization of mortgages and the introduction of securitized products such as mortgage-backed securities (MBS) significantly reduced the cost of credit for borrowers as well as the credit risk for lenders. In 2008, over two-thirds of all residential loans were mortgage-backed securities, the highest share in the OECD. Automated underwriting, that is loan approvals determined by computer-based algorithms, and securitization not only reduced the cost of borrowing for consumers but also made subprime loans more profitable for lenders. In the wake of a low-interest environment in the 1970s, lenders started to offer floating, adjustable interest rates, which made lending more profitable because it shifted the risk of rising interest rates and thus the burden of higher costs onto borrowers and off the books of lenders. With rising house prices and growing home equity since the 1970s, families began to make ample use of home equity loans. Coupled with adjustable interest rates, these loans provided banks with sources to cover their funding costs irrespective of the broader interest environment and with secure collateral in the case of borrowers' default (Hyman 2011, ch. 7). During the 1990s and early 2000s, credit requirements for new prospective homeowners were further relaxed and more loans were issued that required no or little documentation about the borrower's assets or income history.

Lenient regulations about loan-to-value (LTV) ratios, which determine how much households can borrow relative to the value of the underlying asset, further contribute to easy access to credit. In the U.S., these ratios could often exceed 100%, offering individuals the possibility to finance complete house purchase without downpayment and paving the way for subprime mortgages (IMF 2011, p. 117). Furthermore, American homeowners heavily relied on the option to refinance their primary home without fees or penalties. The U.S., together with Denmark, is one of the few countries that allow prepayment without penalty.

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14 States, however, retained regulatory powers to set loan-to-value limits.
15 Subprime loans do not conform to the label “prime” because of borrowers' characteristics such as their credit score and have a higher expected probability of default.
(Green and Wachter 2005). The overall cost of mortgage refinancing declined significantly since the early 1990s. Home equity withdrawal became the preferred means of financing home improvements and personal consumption (Klyuev and Mills 2007). In combination with rising house prices, many homeowners increased their outstanding mortgage principal by refinancing and extracted more equity from their homes.

Lastly, the government not only intervened in lending markets via GSEs and indirect guarantees but also through fiscal policy incentives that reduce the cost of borrowing and incentivize households to take on debt. Up until 1986, the U.S. tax code had allowed the deduction of all interest payments, but the Tax Reform Act of 1986 phased out the deductibility of most non-mortgage related interest payments. This made mortgage debt, including home equity loans and home equity lines of credit, fiscally very attractive (Dunsky and Follain 2000).

**Political Coalitions**

The shifting norms in corporate finance strongly influenced the deregulation of financial markets in the 1970s and 1980s. During the 1980s, the U.S. had moved from a stakeholder model of corporate governance toward a shareholder model of governance, resulting in the growing dominance of markets and financial values. This move was driven by corporate managers and court rulings regarding taxation and executive compensation and accompanied by corporate attempts to weaken the power of labor (Davis 2009; Hacker and Pierson 2010). Politically, the Reagan and Clinton presidencies were able to rally support for neoliberal and finance-friendly policies (Abramowitz and Saunders 1998), while the financial industry and the Federal Reserve under its chairman Alan Greenspan successfully influenced legislative decision and promoted a deregulatory agenda (McCarty, Poole and Rosenthal 2013; Suárez and Kolodny 2011). Both political parties have generally favorable positions toward finance and the financial industry. Republicans sought to promote an agenda of “free market conservatism” and a homeowner society through various Congressional acts, including the National Affordable Housing Act (1990) and the Federal Housing Enterprises Financial Safety and Soundness Act (1992). For Democrats, increasing homeownership, particularly among low-income Americans and minorities, was perceived as a political instrument of redistributive egalitarianism. The American Homeownership and Economic Opportunity Act of 2000 eased financing of mortgages, and the American Dream Downpayment Act of 2003.

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16 Recent evidence shows that the mortgage industry during the 2000s lobbied U.S. representatives from districts with a large fraction of subprime borrowers, seeking to influence congressional voting behavior on housing-related legislation (Mian 2013).
assisted low-income families with mortgage downpayments (McCarty et al. 2010). The set of policies that allowed finance to thrive in the U.S. not only changed Wall Street but also had considerable effects on Main Street. Most American households are now part of the market in their various roles as investors, for example in stock markets, pension funds, and mutual funds, and as debtors, owing credit card debt, student loans, and mortgage payments, culminating in what Fligstein and Goldstein (2015) termed the rise of a “financial culture” (see also Langley 2008). With institutional bonds and a policy environment that channels credit flows more easily toward households, I therefore classify the American credit regime as permissive.

3.3.3 The German Credit Regime

Denmark and the U.S. are cases of permissive credit regimes that provide relatively easy access to credit for households. Germany, by contrast, has a much more restrictive credit regime that tends to channel credit flows away from households and toward the business sector. The consequence is that German households find it much harder to tap into credit markets than their Danish and American peers.

Germany is often classified as a traditional bank-based (Krahnen and Schmidt 2004; Zysman 1983) or “contested” (Engelen and Konings 2010) financial system where banks, rather than securities markets, are the dominant channel of financial intermediation. When most OECD countries began to liberalize their capital accounts in the 1970s, Germany, together with Japan, only half-heartedly lifted cross-border restrictions on capital flows. Until 1979, it regulated foreign transaction to manage exchange rate fluctuations. The tighter regulatory grip on international capital flows and the limited depth and breadth of Germany’s domestic financial system reflect an institutional and political environment that nurtures the primary role of banks as taking deposits from German savors and lending capital to firms. Even today, financial markets still play a minor role in Germany. Securities markets are still underdeveloped, despite various political attempts to encourage households to participate in the stock market. Capitalized pension funds, hedge funds or private equity funds also remain less important. Credit cards as one of the most important sources of liquid capital in other countries, especially in the United States, have grown only slowly in Germany since the 1990s and have little impact on overall borrowing behavior. In Germany’s cash-based economy, credit cards are not widely used and typically take the form of “charge cards” that have to be repaid in full at the end of each monthly billing cycle. In other words, the true credit function is largely missing. Overdraft facilities, on the other hand, are more
frequently used and can address financial liquidity needs, although at very high interest
rates and much smaller amounts than available for American credit cards. The reasons
for this suppressed, or “contested” (Engelen and Konings 2010) financial system lie in the
dominance of bank lending to industry, particularly to small- and medium-sized enterprises
(SMEs), and political choices and institutional structures that incentivize and favor savings
and direct fiscal subsidies over loans.

Institutional Complementarities

The German financial system is dominated by publicly-owned savings banks and cooperative
banks, which in 2009 together had a market share of 82% and held about 44% of all banking
assets (OECD 2010). Both types of banks are not strictly profit-oriented and required by law
to serve the liquidity and credit needs of their local and regional constituencies and, in the
case of cooperative banks, the interests of their members, typically farmers and craftsmen
but also private individuals. The savings and cooperative banking sector provides the vast
majority of lending services to small- and medium-sized enterprises (SME), the backbone of
the German economy, also known as the German Mittelstand (Hackethal 2004).

SMEs have established close banking relationships with “house banks” (Hausbanken)
that supply long-term debt-financing, so-called “patient capital.” Access to funding in this
stakeholder model of corporate governance with concentrated ownership depends less on
publicly-available financial data or current returns as in shareholder models of corporate
governance and more information gathered through formal and informal networks and mon-
itoring. Moreover, patient capital allows firms to retain a skilled workforce throughout the
business cycle and invest in long-term projects. Firms are embedded in dense business net-
works with banks, suppliers, and clients and depend for their corporate strategies on tax
provision, tight securities regulation, and cross-shareholdings (Culpepper 2005; Hall and
Soskice 2001). In contrast to firms in the U.S. or the U.K., the debt leverage of German
firms is therefore much lower (Bannier and Grote 2008; Vitols 2001). The close relationship
between banks and firms, especially SMEs, makes lending to households less profitable and,
in turn, a lower priority.

The Bundesbank, Germany’s central bank, played a pivotal role favoring savers and
asset-owners by targeted price stability and low inflation and operating restrictive stabilizing
policies with high minimum reserve requirements that made credit more expensive (Allen
Germany's corporatist structure further dampened inflationary wage increases, helping to keep the export-oriented industrial sector competitive.\textsuperscript{17}

The liberalization of financial markets also affected the relationship between firms and banks—but not in ways that would alter the fundamental flows of credit toward the business sector. Large private banks began to reorient their business model away from the traditional provision of credit lines toward the more profitable investment banking model (Lütz 2005). Large firms similarly saw international capital markets as new sources of funding and began to shift their corporate governance framework toward profitability and shareholder values (Höpner and Krempel 2003). The Deutschland AG (Germany, Inc.), a term often used to describe the close ties and cross-holdings between large private banks and large firms, began to disintegrate during the 2000s. But this did not mean that the system turned fully toward a US-style shareholder value model. New long-term investors such as mutual and pension funds have filled the gap left by banks and constitute new stakeholders in large companies with a relatively long-term outlook and, again, help to shield against hostile takeovers. But more importantly, the relationship between smaller banks and the public and cooperative banking sector, including the state-owned Landesbanken, was much less affected by financial liberalization and is still based on the structural features of the stakeholder model. SMEs retain close relationships with one key medium-sized bank and evidence suggests that they are still satisfied with the existing banking structure and do not demand access to market-based finance (Deeg 2009).

As international financial markets became more closely linked, especially with the European Union, foreign banks began to enter the German lending market in the 2000s, resulting in growing competition and declining credit standards. Yet domestic household borrowing increased only mildly as German banks used their domestic deposits to lend to households in other European countries instead of lending to German households themselves (Detzer et al. 2017, ch. 2). In sum, despite the liberalization of financial markets and the entry of foreign lenders, credit still tends to flow heavily toward business sector, thus leaving German households with much more restricted access to credit than their Danish or American counterparts.

\textsuperscript{17}For an in-depth account of the history of consumer credit in Germany see (Mertens 2015).
During the postwar era, the government established an institutional framework based on an ordoliberal "social market economy" and a strong focus on export-oriented industrialization. This "export-savings regime," as Mertens (2015, ch. 4) calls it, rested on a set of political and institutional factors that aimed to push households to save and accumulate deposits with banks. The latter then turned deposits into long-term credit to industrial sectors. Banks were closely associated with industrial policy to promote growth or even fund government spending (Story and Walter 1997, ch. 6). The broad spirit of banks in Germany has always been and still remains to service business interests and in particular finance and support export activities. In the 1990s, the Conservative government passed three Financial Market Promotion Acts that aimed to bolster German securities markets, which were lagging behind compared to other European countries. What is noteworthy is that these reform efforts were not concerned with improving credit supply to households. Instead, their goal was to mobilize households’ assets, which in most cases were bank deposits, to be injected as capital into the domestic financial market (Mertens 2015, ch. 4). If anything, households became more integrated into the financial market through their bank deposits and, since the 2000s, through fledgling private supplementary pensions, but not through more credit or lending activities like in Denmark or the U.S.

The expansion of the German mortgage market—in stark contrast to developments in Denmark and the U.S.—was much more limited because of regulatory policies. Compared to other OECD countries, Germany has one of the most restrictive loan-to-value ratios (LTV) (Andrews, Caldera Sánchez and Johansson 2011). Primary housing loans cannot exceed 60% of the underlying value, although this regulatory limit can be extended by another 20% through second-order housing loans with higher interest rates offered by building societies. Regulations further require lenders to determine loan amounts—not just for mortgage applications—based primarily on prospective borrowers’ current income and their ability to repay their loans. For property-based loans such as mortgages, the value of the underlying asset is less important and follows very conservative appraisal rules that do not allow for continuous re-assessment (Geiger, Muellbauer and Rupprecht 2016). German mortgage loans have an initial maturity of 25 to 30 years with a fixed interest rate and carry a prepayment penalty, unlike mortgages in the U.S. or Denmark, which discourages expensive refinancing (Green and Wachter 2005). For example, in 2003 almost all mortgage loans were

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18 Ordoliberalism is an economic doctrine based on the idea that a free market can only flourish when the government guarantees order and stability by maintaining price stability, ensuring fair competition, and enforcing economic liability (see, for example, Peacock and Willgerodt 1989).
fixed-interest. Lastly, German homeowners can also not draw on financial products such as interest-only loans or home equity loans like their Danish or American, further restricting access to credit.

The regulatory environment of low LTVs, conservative asset evaluation, and the prevalence of fixed interest rate loans with costly pre-payment options reflects the long-term, stability-oriented nature of the German financial system. In stark contrast to the U.S. and Denmark, this significantly limits homeowners' abilities to benefit from rising house prices by refinancing their mortgage or taking out more home equity loans. The path-dependency and stickiness of Germany's institutional bonds and policy environment surfaced when the German mortgage system and its financial system more broadly came under pressure from the European Commission's Lisbon strategy in the 2000s, which pushed for regulatory harmonization of national mortgage markets within the E.U. The Commission sought to eliminate what it perceived as protective and credit-constraining elements of the German covered bond markets, in particular the low LTV ratios based on conservative appraisal of house values and the pre-payment penalty. Yet the German government, strongly lobbied for by the German banking associations, successfully defended the restrictive character of its mortgage system (Mertens 2015, ch. 5).19

Fiscal policies are the final elements that supplement this regulatory policy environment by disincentivizing individuals to borrow and, instead, encouraging them to save. The deductibility of mortgage interest payments was removed in 1986 and replaced with far less valuable tax-breaks that are limited to first-time buyers. In the 2000s, these tax breaks were then halved and later fully abolished (Geiger, Mullbauer and Rupprecht 2016). Whereas preferential treatment of debt in the Danish and U.S. tax code eases access to credit by making borrowing cheaper, the German tax code has no such provisions. Instead, the focus of fiscal policies lies on direct subsidies for new homeowners (Eigenheimzulage) or subsidies and tax-favored contractual savings plans (Mertens 2015, ch. 8). Moreover, fiscal policies tend to favor corporate profits at the expense of consumption. Tax rates on corporate incomes have declined, whereas value-added taxes have risen (see Turner 2016, ch. 11). In sum, the close alliance between banks and business and a policy environment that focuses on export-driven growth while stifling consumer borrowing makes Germany a restrictive credit regime.

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19 See also the European Commission's greenbook (KOM/2005/0327) and whitebook (KOM/2007/807).
3.4 Ease of Borrowing and the Distribution of Household Debt

The structure of credit regimes and their degree of permissiveness influence how easy it is for individuals and households to borrow money and, in turn, shape the overall distribution of debt across households. In Denmark and the U.S., banks have formed much closer ties to households because firms rely on funding through private foundations and capital markets. This leaves banks with households as a profitable target for their lending activities. Deep, liquid mortgage markets and capital-based pension funds draw households further into markets and prop up the role of banks as intermediaries. Regulatory policies promote rather than curtail borrowing through lower LTVs, forward-looking assets appraisal, and wide-spread securitization practices. Fiscal policies offer much stronger incentives to borrow than to save.

In contrast, Germany has a restrictive credit regime where banks are in close relationships with the business sector through dense business networks, cross-holdings (albeit shrinking), and, perhaps most importantly, the provision of long-term patient capital. Bank lending is primarily directed towards firms, which comes at the expense of more restricted access to credit for many households. The bonds between banks and firms are created and sustained through conservative regulatory policies that make lending to households costly and through fiscal policies that incentivize contractual savings. In this section, I document how access to credit differs across families in Denmark, the U.S., and Germany, and how families’ debt burden, that is the ratio of debt to income, has changed over time in these countries.

3.4.1 Access to Credit

The macro-level credit composition highlighted in the previous sections also influences how easily households can tap into credit markets and borrow money. Figure 3.3 shows how self-reported access to credit varies across the credit regimes of Denmark, the U.S., and Germany. Over a third of Danish households and almost half of American households report that they have easy access to credit. But fewer than 8% of German households say that they can easily tap into credit markets, supporting the categorization of Denmark and the U.S. as a permissive credit regime and Germany as a restrictive credit regime. These patterns also reflect the broader macro-credit flows in the economy as shown in Figure 3.2 above. In Denmark and the U.S., a much larger share of credit goes towards households as opposed to
Figure 3.3: Share of Households with Easy Access to Credit, Averages for 2000-2010

Notes: For the U.S., the bar plots the share of respondents saying “no” to the question of whether a loan application has been turned down. For Denmark and Germany, the bars plot the share of respondents who state it is “very easy to borrow money.” These are weighted survey responses. Sources: U.S.: Survey of Consumer Finances. Denmark and Germany: European Social Survey, 2000-2010.

Governments can make it easier for individuals to borrow. Housing finance is particularly prone to government intervention. Figure 3.4 shows an index of government participation in housing finance, calculated by the IMF, which aggregates information on social housing policies that benefit low-income and first-time homebuyers, fiscal incentives, and state-owned or state-sponsored financial institutions or housing finance agencies that either directly originate mortgages or facilitate liquidity through secondary market interventions or implicit guarantees IMF (2011). The index ranges from 0 (least interventionist) to 1 (most interventionist).

Housing policies in the U.S. are more than twice as interventionist as Danish and German ones, and they are also the most interventionist among advanced economies, resulting from subsidies to low- and middle-income homebuyers, subsidized mortgage guarantees by government sponsored entities, and the tax deductibility of mortgage interest payments. Denmark similarly allows homeowners to deduct interest payments from their tax liability (unlike Germany), while the German government is the only one among the three cases that subsi-
Figure 3.4: Index of Government Participation in Housing Finance Markets, 2008

Notes: The Index of Government Participation in Housing Finance Markets is a weighted index composed of the following categories: subsidies to first-time or other buyers; upfront subsidies to buyers through savings account contributions or through preferential fees; subsidies to selected groups (low and middle income); provident funds early withdrawal for house purchases; housing finance funds, government agency provides guarantees and loans; tax deductibility of mortgage interest payments; capital gains tax deductibility; and state-owned institutions are majority market player in mortgage lending (> 50 percent). Source: Data from IMF (2011, p. 126).

dizes buyers through savings account. In the next section, I show that these cross-national differences in access to credit also influence how much debt households carry.

3.4.2 Trends in Household Debt

Over the past decades, household debt as a share of income has risen in most OECD countries, but as the boxplots in Figure 3.5 show, these averages mask considerable variation in debt-to-income ratios across countries. More importantly, these aggregate statistics also conceal the distribution of debt within countries and across families—something that has received much less attention in the literature. This matters because families with higher incomes or more assets can potentially shoulder larger amounts of debt while often also paying lower interest rates. For lower-income families with little assets, however, debt burdens can more easily turn into financial insecurity if debt repayment and higher interest rates become a problem.
Figure 3.5: Average Debt-to-Income Ratios Across OECD Countries, 1995-2015

![Graph showing average debt-to-income ratios across OECD countries, 1995-2015.](image)

Notes: The debt-to-income ratio is measured as total household debt as a share of net disposable income. The dots show country-year observations. The dark green line is the OECD average. Sources: European Credit Research Institute (ECRI). Lending to Households and Non-Financial Corporations in Europe. Statistical Package 2015.

In this section, I take a closer look at the distribution of debt across Danish, American, and Germany households. I focus primarily on unsecured debt as a source of financial liquidity for families to address financial gaps. Unsecured debt typically includes revolving debt such as credit card loans, overdraft provision, or other non-collateralized loans from financial institutions such as personal loans, deferred payments on bills, or educational loans. Secured debt, by contrast, are loans guaranteed by collateral such as real estate property or cars that the lender can seize in the case of default. Some secured loans such as home equity lines of credit can also provide financial liquidity.

Figure 3.6 documents the development of families' unsecured debt leverage, a common measure that scales debt by disposable income, in Denmark, the U.S., and Germany. The panels split debt leverage by income to provide a more nuanced picture of the variation in debt across households. The lines are smoothed weighted local polynomial regressions fitted to the data points to highlight broader trends.

Debt trajectories differ significantly across and within countries. First, unsecured debt leverage is positively correlated with income in Denmark, negatively correlated with income in the U.S., and virtually uncorrelated with income in Germany. Low-income Americans

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20For data sources and variable construction see section A.1 in the data appendix.
Figure 3.6: Unsecured Debt Burden in Denmark, the U.S., and Germany, by Income

Note: The panels display households’ unsecured debt as a share of disposable income by household gross income percentiles for Denmark and quintiles for the U.S. and Germany. Quintiles are the mean of observations between neighboring percentiles. To ease comparison, quintiles are scaled to the range of percentiles. The lines are weighted local polynomial regressions (LOESS lines). Unsecured debt in each country consists of the following categories. In Denmark: bank loans, credit card debt (included since 1990), and student loans (included since 1991). Bank loans may include a fraction of mortgage debt because of financing requirements of Danish mortgage lenders. Individuals who take out a mortgage have to finance part of the mortgage, often the down payment, through a bank loan. This fraction is typically less than 20 percent of the total purchase value. To address this issue, unsecured debt is based on the non-home owning population. In the U.S.: installment loans, credit card balances, other debts, other lines of credit. In Germany: loans from banks, loans from family and friends, and other bank loans. The plots for the U.S. and Germany are constructed using sampling weights; the plot for Denmark is based on the full population. Sources: Denmark: full-population administrative records; USA: Survey of Consumer Finances; Germany: SAVE Study.

and middle- and high-income Danes are the ones with the highest debt leverage in their respective countries, while in Germany debt leverage is low, irrespective of income levels. Second, debt leverage has grown to different degrees across these countries. In the U.S., the increase in debt leverage was mostly concentrated among lower-income households, whereas in Denmark it was more evenly distributed across the income spectrum although slightly more concentrated among middle- and higher-income households. In Germany, by contrast, families only mildly increased their debt exposure. In the countries that saw an increase in debt leverage, it was almost entirely driven by faster growth in debt levels that exceeded growth in incomes.

One key alternative for household tapping into credit markets and borrow money would be to use their savings as a source of financial liquidity. We would expect that families with more liquid savings would draw less on credit markets to address financial shortfalls and use
tap into their savings first, whereas those with limited savings are more likely to draw on credit markets. Figure 3.7 confirms this relationship. Danish and American households with more liquid savings have a smaller debt leverage ratio, suggesting that savings can at least partially substitute for taking on debt. Even in Germany, there is a weak negative correlation between debt leverage and savings. Debt leverage grew strongest among Danish and American families with fewer savings, but only moderately, if at all, in Germany.

3.5 Linking Credit Regimes, Welfare States, and Household Debt

What then explains these striking differences in debt-to-income ratios across and within countries? I argue that this observed variation is driven by two factors: first, the structure of a country’s credit regime and the extent to which it grants families access to credit. Second, the size of the social policy shortfall between income losses and higher expenses on the one hand and declining financial support through the welfare state on the other hand.

Note: The panels display households’ unsecured debt as a share of disposable income by liquid savings percentiles for Denmark and quintiles for the U.S. and Germany. Quintiles are the mean of observations between neighboring percentiles. To ease comparison, quintiles are scaled to the range of percentiles. The lines are weighted local polynomial regressions (LOESS lines). Liquid savings are defined as cash and savings in bank accounts as well as equity and stock. For the debt definitions and data sources see notes to Figure 3.6.

21 Liquid savings refer to assets that families can draw on immediately such as cash, deposits in checking or savings accounts, or stock ownership. Illiquid assets such as pension funds or real estate are harder to access and costlier to liquidate.
Before I turn to more detailed micro-level evidence about credit as a form of social insurance and social investment in the next two chapters, I end this chapter by offering some macro-level evidence about the relationship between the structure of credit regimes, welfare states, and household debt. As I argued above, the permissiveness of credit regimes is a key element the helps us explain to what extent households borrow money to pay for basic social services and address social policy shortfalls. Figure 3.8 visualizes the macro-level links between household debt, social policy expenditures, and the permissiveness of credit regimes. I use a measure of financial development that captures the depth, access, and efficiency of financial markets and financial institutions as a proxy for families’ access to credit. The figure shows that a negative relationship between household debt and social

**Figure 3.8: Credit Regimes, Social Policies, and Household Debt across OECD Countries, 1980-2014**

![Credit Regimes, Social Policies, and Household Debt](image)

*Notes: The dots are country-year observations of OECD countries for the years 1980-2014. The blue line is a fitted linear regression line. Credit is measured as total credit to households and non-profit institutions serving households as a share of GDP in the third quarter of any given year. Public social transfers are measured as public expenditure on social benefit cash transfers as a share of GDP. Access to credit is approximated by the IMF’s Financial Development Index, a composite index capturing access to and depth and efficiency of financial markets and financial institutions. For methodological details on the construction of the indices see Svirydzenka (2016). The range of credit access is defined by splitting the index into tertiles. Sources: Credit to households comes from BIS Total Credit Statistics (2016). Public social transfers comes from OECD Social Expenditure Database (2016). Financial development comes from IMF Financial Development Index (2016).*
policy expenditures emerges only in countries with advanced financial regimes, suggesting a substitutive effect of credit for welfare policies when access to credit is permissive.23

The descriptive findings also hold up in a formal regression framework, estimating the relationship between social policies and household debt in different credit regimes as follows:

\[
Y_{it} = \beta_1 G + \beta_2 \sum_{f} F + \beta_3 (G \cdot \sum_{f} F) + \gamma X_{it} + \alpha_i + \delta_t + \epsilon_{it}
\]  

(3.2)

where \(Y_{it}\) is the debt-to-GDP ratio in country \(i\) in year \(t\). \(G\) is a measure of unemployment insurance generosity, ranging from 0 (least generous) to 1 (most generous). \(F\) is a set of dummy variables that group the degree of credit regime permissiveness, approximated by the IMF’s financial development index, into tertiles (medium development serves as the omitted baseline). \(\beta_3\) captures the interaction effect of unemployment insurance generosity at low and high levels of financial development. Figure 3.9 shows marginal effects coefficients, indicating that in the context of weak social policies and permissive financial regimes, households turn to credit markets to address the social policy shortfall.

Figure 3.9: Marginal Effect of Unemployment Insurance Generosity on Household Debt by Permissiveness of Credit Regime

Notes: Marginal effects plot of unemployment insurance generosity on total credit to households (% of GDP) by the permissiveness of credit regime. The results are based on model (2) in Table A.3.1 in the Appendix.

These findings offer suggestive support for the macro-level part of the argument but can-
not shed light on the micro-level questions raised by this project. Under what circumstances are families taking on debt and what explains the variation in debt levels across and within countries? How does the size and nature of the social policy shortfall influence families’ borrowing choices cross-nationally? This is the focus of the following two chapters, where I turn to micro-level data to answer these questions.
Chapter 4
Credit as Social Insurance: Borrowing to Address Social Risks

In 2012, the New York Times profiled Frank Walsh, a 49-year-old electrician from Annapolis, Maryland.¹ When he lost his job in 2011, Walsh and his family supported themselves through a combination of unemployment benefits and various side-jobs. In his state, unemployment benefits were about half of the weekly average wage up to a maximum of around $380 and paid for up to 26 weeks. During this time, Mr. Walsh ran up about $20,000 in credit card debt to make ends meet. Had he lived in Denmark instead of his native Maryland, his unemployment benefits would have been between 80 to 90% of his prior wage and would have lasted for up to 24 months.² Perhaps even more consequential, he most likely would not have gotten deep into credit card debt as he did in the U.S., because the Danish welfare state would have compensated most of his income loss.

The story of Frank Walsh and his hypothetical Danish persona illustrate that the financial burden of job loss varies significantly across countries. But there is also considerable variation within countries. The American welfare state distributes much fewer resources to lower-income households compared to the Danish welfare state and exposes households to a larger gap between their financial needs and social policies’ financial support—a gap I refer to as social policy shortfall. But the comparison across countries reveals only half of the story. The Danish welfare state, often considered one of the most comprehensive, focuses its protective capacity heavily on lower-income households and leaves higher-income households with larger financial shortfalls. In light of limited support from the welfare state, credit markets have become an important financial lifeline for many individuals to bridge unexpected as well as

¹The story of Frank Walsh has been reported in “The Vanishing Male Worker: How America Fell Behind”, The New York Times, December 11, 2014.
²This assumes that Mr. Walsh’s income falls in the lower-income category of around two-thirds of the median income in both the United States and Denmark.
discretionary income losses. I argue that in cases where households have sufficient access to credit, borrowing increasingly fills gaps left by incomplete provision of public social welfare.

In this chapter, I focus on the first type of social policy shortfall, that is unexpected and exogenous income losses caused by disrupted employment patterns, and study to what extent households borrow money to compensate for this type of social policy shortfall. I empirically test the argument that two factors shape the variation in household debt across countries and households. First, the size of the gap between households’ income losses due to involuntary disruptions in employment patterns and the financial support from the welfare state—the social policy shortfall. Second, the structure of the credit regime and the degree to which households have access to credit and can borrow money to fill these gaps. The empirical implications of this theory are that households that experience a larger social policy shortfall borrow money to bridge financial gaps, but only in cases of permissive credit regimes.

**Linking Social Policy Shortfalls and Household Debt**

I substantiate these claims by tracking households in Denmark, the U.S., and Germany over time and leveraging policy reforms akin to natural experiments to shed light on the effect of social policy shortfalls on household debt. I begin by studying the links between income losses and household debt in Denmark, where higher-income households experience larger social policy shortfalls in the case of unemployment than lower-income ones and smooth income losses by borrowing money. More recent welfare reforms, however, have reduced benefits and tightened access to social policies such as unemployment insurance benefits. Lower-income households in particular felt the financial burden of these reforms and also began to borrow more in response to a growing social policy shortfall. I then turn to the U.S. where lower- and middle-income households are affected the most by shrinking government transfers and more frequent disruption in employment patterns such as fluctuating work hours, temporary work, or job loss. These households have to shoulder larger financial gaps and tap into credit markets to bridge the resulting financial shortfalls. Income losses due to unemployment are by no means a new phenomenon, but the growing frequency of unemployment spells and the decline of welfare states’ safety net functions have increased the financial burden of unemployment. Shorter and fluctuating work hours, in particular when they are involuntary, are another key driver of volatile incomes but rarely mitigated by social policies. In these cases, households borrow money to compensate for social policy shortfalls. Lastly, the German case adds an important comparison to the Danish and U.S. cases along two dimensions: Germany’s restrictive credit regime makes it harder for indi-
viduals to borrow money because it channels capital flows toward the business sector and, instead, incentivizes individuals to save. The labor market centers around a protected core of workers with long-term, stable employment but since the 2000s has begun to develop an exposed periphery of workers with non-standard and marginal forms of employment. When individuals experience unemployment and income losses, they rarely borrow money to address financial shortfalls because they cannot easily tap into credit markets. While credit cards with “true” lines of credit as they are widely used in the U.S. are much less common in Germany, overdraft facilities serve a similar but less important function and help households address financial gaps. The key difference, however, is that households draw upon very small amounts compared to the U.S. As I will show below, the Hartz labor market reforms of 2005, which significantly cut social benefits to the long-term unemployed, increased the social policy shortfall for affected households but was not met by an increase in debt because access to credit remained restrictive.

The last sections of this chapter highlight the importance of political choices on the relationship between social policies and household debt. On the one hand, the generosity of the social safety net directly influences households’ financial needs and their decisions to borrow money. In the U.S., I leverage exogenous variation in the generosity of unemployment insurance (UI) benefits across states and over time, demonstrating that individuals struck by unemployment borrow more in states that have less generous UI benefits. On the other hand, policymakers can also influence individuals’ access to credit. When the Danish government in 1992 for the first time allowed homeowners to use home-equity loans and borrow against the value of their house, households that previously had little savings to deal with income losses began to draw heavily on these loans to address financial shortfalls.

The findings of this chapter suggest that credit can substitute for social policies and help households fill gaps between their financial needs and the welfare state’s financial support. But the variation in the size of the social policy mismatch and the resulting borrowing response across households has downstream consequences on households’ economic and financial security. Higher-income households in Denmark repay their debt within a few years after unemployment began. Their more secure economic position shields them from future economic risks such as financial constraints because of the burden of debt repayment or outright default. By contrast, lower-income households in the U.S. that are in a more vulnerable economic position and take on debt to compensate for income losses are more exposed to future risks as another income shock can lead to arrears and default.

This and the following chapter assemble a range of individual-level data sources for each
of the three cases to test the empirical implications of the argument. For Denmark, I use administrative records that cover the entire population since the late-1980s. For the German and U.S. cases, I draw on several panel datasets that contain information on labor market status as well as income, assets, and liabilities. Specifically, I use the Survey of Income and Program Participations, the Survey of Consumer Finances, and the Panel Survey of Income Dynamics for the U.S. case as well as the SAVE Panel Study and the German Socio-Economic Panel Study for the German case. These datasets allow me to track households over time and estimate households’ borrowing response to unexpected income losses depending on the social policy and credit regime of their respective countries.\(^3\)

Unemployment and Income Losses: Cross-National Variation in the Social Policy Shortfall

As I document in Chapter 2, many OECD countries have deregulated their labor markets during the past decades. For some individuals, this resulted in shorter employment tenures, more frequent job switches, and more frequent spells of unemployment. But for others, these developments have had less impact on the stability of their employment trajectories. The length of employment tenures provides a useful measure to compare the disruption of employment patterns, for example due to unemployment, frequent job switches, or short-term temporary employment. The top panel of Table 4.1 shows that weak employment protection and flexible labor markets in Denmark and the U.S. are associated with much shorter tenure rates, whereas the more rigid German labor market keeps employees much longer in their jobs. Over 40% of Germans have had the same job or employer for ten years or longer, while in Denmark and the U.S. only 26% of employees have equally long tenure.

Disrupted employment patterns take different forms, but job loss is still the most common and financially consequential form of disruption. As the case of Frank Walsh illustrates, unemployment is a very different experience across countries. The bottom panel of Table 4.1 shows that unemployed Americans and Danes tend to have shorter spells of unemployment than unemployed individuals in Germany who tend to be unemployed much longer. These statistics reflect two sides of the same coin. Weak employment security produces higher labor market turnover and more frequent spells of unemployment, but the flexible labor market channels unemployed individuals into new jobs at higher rates. Stronger employment regulation, by contrast, protects employees and facilitates long-term employment, but it also makes it more difficult for those who leave the workforce, voluntarily or involuntarily, to return to full-time employment.

\(^3\)I describe the data sources in greater detail in section A.1 in the data appendix.
Table 4.1: Frequency of Average Employment Tenure Rates and Duration of Unemployment Spells (in %)

<table>
<thead>
<tr>
<th>Employment Tenure</th>
<th>&lt;6 months</th>
<th>1-3 years</th>
<th>≥ 10 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>13.6</td>
<td>17.9</td>
<td>26.3</td>
</tr>
<tr>
<td>USA</td>
<td>20.2</td>
<td>10.7</td>
<td>26.2</td>
</tr>
<tr>
<td>Germany</td>
<td>8</td>
<td>14.3</td>
<td>41.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Duration of Unemployment Spell</th>
<th>&lt;3 months</th>
<th>6-12 months</th>
<th>≥ 12 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>31.5</td>
<td>16.8</td>
<td>32.4</td>
</tr>
<tr>
<td>USA</td>
<td>42.2</td>
<td>10.2</td>
<td>20.5</td>
</tr>
<tr>
<td>Germany</td>
<td>24.6</td>
<td>15.9</td>
<td>44.3</td>
</tr>
</tbody>
</table>

Notes: Top panel: The cell numbers show the share of employed individuals by their average employment tenure in 2014. Tenure is defined as the number of months or years employees have been in their current or main job or with their current employer. Bottom panel: The cell numbers show the share of unemployed individuals that experience an unemployment spell of a given duration in 2015. Sources: OECD Labor Force Statistics. 2017.

Once out of work, each country’s unemployment insurance (UI) system provides different degrees of financial support and varies according to eligibility, size of benefits, and entitlement period. A common measure to compare the generosity of the UI systems is the replacement rate, which measures the share of prior labor income that unemployment insurance benefits replace in the event of job loss. For example, a rate of 50% means that unemployed individuals receive government transfers amounting to half of their earnings prior to unemployment. Figure 4.1 shows average UI replacement rates for a single person and a married couple for low-, middle-, and high-income earners in Denmark, the U.S., and Germany. On average, Denmark has the most generous UI system, followed by Germany and the U.S. But the key difference is that benefits in Denmark and, albeit to a lesser degree, in the U.S. vary significantly across income groups. For lower-income Danes, benefits replace around 90% of their prior earnings, but the benefits for higher-income Danes are less than half of their prior earnings and smaller than benefits for middle-earner Americans. In contrast, the German UI system replaces around 60% of prior earnings for individuals virtually regardless of income. The U.S. and Denmark therefore make for a useful comparison since they share similarly flexible labor markets but provide very different degrees of income support through their

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4 The three cases have been associated with different types of welfare regimes (see, for example, Esping-Andersen 1990, 1999). These welfare regimes encapsulate, among other aspects, different logics of social policy design.
Figure 4.1: Initial Unemployment Replacement Rates, 2011

Note: Earnings groups are defined as follows: lower-income households are at 67% of a country’s average wage, middle-income at the average wage, and higher-income at 150% of the average wage. The family types are a single person household and a married couple with no children, respectively. Source: OECD Tax-Benefit Model. 2017.

respective social safety nets. As a result, households face very different financial gaps and social policy shortfalls when their work hours and earnings fluctuate or when a household member loses their job.

In the following sections, I study the variation in private debt across households in Denmark, the U.S., and Germany as a result of what I call exogenous income losses due to disrupted employment patterns. I test the core argument that households are responding to a gap between their financial needs and the financial support they receive from the welfare state—the social policy shortfall—by borrowing money.

4.1 Denmark

I begin with Denmark, which exemplifies a case that combines a flexible labor market, a comprehensive welfare state, in particular for lower-income households, and a permissive credit regime that grants individuals easy access to credit. Over the last two decades, Danish households on average more than doubled their non-mortgage debt relative to their income.
4.1.1 Unemployment

To shed light on the whether households borrow in response to income losses due to unemployment, I begin by comparing unsecured debt leverage, that is the ratio of debt to income, of households where the household head is unemployed or in an activation program to those where the household head is full-time employed. This is a useful comparison because it reflects broader trends in household debt among Danish households with regularly-employed spouses and shows to what extent households with an unemployed member deviate from these trends. The left panel of Figure 4.2 shows that until the mid-1990s, households where the head is unemployed had slightly higher levels of debt relative to their incomes compared to full-time employed ones. In the following decade, unemployed households had a smaller debt leverage than employed households, but in the aftermath of the financial crisis, the debt burden of unemployed households surpassed that of employed ones.

The right panel focuses on households where the head is unemployed or in activation and plots the debt burden for households across different income tertiles. Higher-income households carry the most debt relative to their income, followed by middle- and lower-

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Figure 4.2: Unsecured Debt-to-Income Ratios Among the Unemployed by Income in Denmark

Notes: The figure shows unsecured debt as a share of disposable income households where the head is unemployed. Unemployment includes individuals in activation programs. Income tertiles are based on household disposable income. Source: Full-population administrative records.

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5I refer to employed or unemployed households as those households where the household head is full-time employed or unemployed.

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income unemployed households. The debt burden grew for households across the income spectrum, but middle- and particularly lower-income households have increased their debt leverage faster than higher-income households during the last two decades. Today, lower-income households where the head is unemployed have a debt leverage of almost three times as high as in the late 1980s. Figure 4.2 suggests that higher-income households are the ones that experience the largest social policy shortfalls in the case of unemployment and thus carry more debt because they borrow money to address these financial gaps. Yet it also shows that debt leverage among both lower- and middle-income households has grown even more during the last decades. These trends may reflect a general increase in the availability of credit for these groups and but can also be a response to social policy reforms that lowered overall benefit generosity by restricting access to benefits and shorting entitlement periods.

These descriptive figures are supportive of the overall argument but cannot provide conclusive evidence that changes in debt among households where the head becomes unemployed is driven by the size of the social policy shortfall. Households tap into credit markets for a variety of reasons, and addressing income shortfalls is just one of them. In the following sections, I study the borrowing behavior of Danish households that experience income losses due to unemployment by drawing on a novel event study framework that allows me to dynamically estimate changes in debt levels before and after unemployment. I expect that households take on debt in response to the size of the social policy shortfall in order to address financial shortfalls. Since the social policy shortfall is larger for higher-income households, these households rely more on credit markets to bridge finance gaps.

Event Study Methodology

An event study design is based on sharp changes around an “event,” for example unemployment or childbirth, and estimates how the outcome variable changes in response to this event. Specifically, the event study estimates the outcome relative to the year prior to the event, essentially making comparisons about changes in outcomes relative to the time before the event when the outcome was not affected by the event. This design is well suited for high-quality administrative records with a long time-frame since the estimation requires sufficient individual-year observations before and after the event to draw inference over such long time-horizon. In the Danish full population data, I observe all individuals before and after such an event occurs and can estimate to what extent individuals borrow to address income losses caused by unemployment in the years following the event.

Empirically, the event study model dynamically estimates changes in households’ debt
levels for every year before and after the event without imposing any linearity restrictions. It
does not require choosing a specific control group. The generic event study estimates changes
in the outcome of interest, \( Y_{it} \), in response to an event occurring in year \( t_i \) for individual \( i \).
The model captures the effect of each year before and after the event happens in year \( t_i = 0 \)
by defining an event-dummy vector for each individual \( i \) ranging from \( L \) years before and \( F \)
years after the event happens such that

\[
\mathcal{L} = T = \{ -L, ..., -2, 0, 1, ..., F \}
\]

For example, if the individual becomes unemployed in 2004, this year will receive a value
of zero in the event-year matrix, the next year a value of one, and the year prior a value of
minus one, and so forth. I chose the so-called event window to range from five years before
to five years after the event occurs, resulting in a matrix of eleven event-years per individual.
The year prior to the event \( (L = T = -1) \) serves as the omitted baseline category such that
all estimated coefficients are relative to that year. The model is given as follows:

\[
Y_{it} = \sum_{\ell \in \mathcal{L}} (\beta_{\ell} \cdot 1\{t = t_i + \ell\}) + X_{it}' \gamma + \alpha_t + \delta_{c[i]} + \sigma_{z[i]} + \epsilon_{it}
\]  

(4.3)

where \( X_{it}' \) is a vector of time- and individual-varying controls described in more detail below.\( \alpha_t, \delta_c, \) and \( \sigma_z, \) are year, birth-year, and ZIP code fixed effects, respectively. Year fixed
effects control for time-trends such as the business cycle, national interest rates, and asset
prices, or wage inflation that can otherwise drive borrowing behavior. Birth-year fixed effect
control for life-cycle and cohort effects as well as trends in individuals’ career progression
and address concerns that, for example, younger adults may have more debt than older ones.
ZIP code-year effects allow for heterogeneous effects across ZIP code areas over time. \( \epsilon_{it} \) is
the idiosyncratic error term.

I only consider household heads who experience an unemployment spell of at least two
consecutive years and who were employed for at least two consecutive years before the
unemployment spell to identify the effect of becoming unemployment on unsecured debt.
Since individuals may experience more than one spell of unemployment during their time
in the panel, I select the first year the head becomes unemployment as the beginning of
the spell and then construct a balanced panel of individuals who are observed for at least
five years before and five years after unemployment began \( (T = -5 \) to \( T = +5) \). I then
use the event study framework introduced above to estimate the impact of unemployment.
on households' unsecured debt.\textsuperscript{6} I include the following set of covariates: a set of dummies for disposable income quintile in the year prior to unemployment, age squared, dummies for education levels (primary, secondary, higher, college, and postgraduate), liquid savings defined as savings in bank accounts and stock ownership (log), number of children in the household, total transfer income (log), a dummy for female, and a dummy for homeowners.

\textbf{Results}

Figure 4.3 shows the event-year coefficients of borrowing in response to unemployment based on the baseline event study model in equation 4.3. In the years prior to unemployment,

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{figure4.3.png}
\caption{Marginal Effects of Unemployment on Unsecured Debt}
\end{figure}

\textit{Notes:} The plot shows event-year marginal effect coefficients relative to the year prior to unemployment based on equation 4.3. The year prior to the event \((t = -1)\) is the omitted baseline. The shaded areas are 95\% confidence intervals based on robust standard errors clustered at the household level. The model is based on a balanced sample of households whose household head experiences his or her first unemployment spell between 1992-2007 such that households are observed during the entire period between five years before and after unemployment. \(N=166,114.\)

debt levels follows a flat path. Yet once the household head becomes unemployed \((t = 0),\) debt levels increase sharply by almost 150\% relative to the level in the year before the unemployment spell began. Note that the year prior to the event \((t = -1)\) is the

\textsuperscript{6}Households' assets and liabilities are highly skewed, but a natural log transformation is problematic since it is undefined at zero. But since many households have zero debt, it is important to keep these households in the sample. To address this problem, I resort to a commonly-used inverse hyperbolic sine transformation (IHS) defined for variable \(z\) as \(\sinh^{-1}z = \ln(z + \sqrt{1 + z^2})\) in which negative values and zero in \(z\) are defined. This transformation is linear around the origin, approximates a log transformation at the right tail, and can be interpreted as a standard logarithmic variable (see Pence 2006). I use this IHS transformation throughout for all income, asset, and liability variables.
model's baseline and therefore omitted. Two years after the unemployment spell begun, debt levels have declined, even if not completely to pre-unemployment levels, supporting the argument that households are borrowing money to address temporary income losses caused by unemployment.

This event study model shows that households take on more debt in response to unemployment, but does not reveal the links between debt and the size of the income loss and social policies support. Since the social policy shortfall varies by households' income, we would expect to see different debt levels after job loss depending on the size of the social policy shortfall. To shed light on this relationship, I calculate how much households' disposable income declines as a consequence of unemployment. More generous government transfers, for example toward low-income households, will result in smaller declines in disposable income, whereas less generous government transfers translate into larger declines in disposable income. This approach takes into account government transfers and is a direct measure of the impact of unemployment on households' financial circumstances and the social policy shortfall. I divide households according to the size of their net income loss when the household head became unemployed, resulting in the following two groups: first, those with a net income loss of zero to 25% of prior income and, second, those with a net income loss between 25% and 50%. I then estimate the event study based on equation 4.3 for both income losses groups separately. Figure 4.4 shows the event-year coefficients for each income-loss group over the event window.

Prior to unemployment, the debt trajectories within each income loss group follows a similar flat trend, satisfying the parallel trend assumption to ensure unbiased results. Once struck by unemployment, households that experience larger social policy shortfalls also borrow more. A net income loss of up to 25% increases debt levels by 1.7 times relative to levels in the year prior. Yet those losing between 25% and 50% of prior net income borrow even more, almost three times relative to the baseline. The results remain the same when debt is normalized by income prior to unemployment (see Figure A.4.1 in the Appendix). As before, the event studies show that debt levels return to the pre-unemployment levels after a few years, indicating that households use credit to smooth temporary income losses.

The findings suggest that households that are affected by larger social policy shortfalls, measured by the net income loss caused by unemployment, borrow more to address the financial gap. This increase in debt is concentrated among middle- and higher-income households that face the largest shortfall. To corroborate that higher levels of debt in response to unemployment are indeed concentrated among higher-income households, I estimate the following
Figure 4.4: Marginal Effects of Unemployment on Unsecured Debt, by Size of Financial Gap

Notes: The plot shows event-year marginal effect coefficients relative to the year prior to unemployment estimated from equation 4.3, estimated separately for both income loss groups. The shaded areas are 95% confidence intervals based on robust standard errors clustered at the household level. The financial gap is measured as the size of the income loss and calculated as the change in household disposable income from $t = -1$ to $t = 0$. The model is based on the same balanced sample of households as before.

The fixed effects regression model that allows the effect of unemployment on debt to vary by income quintiles:

$$ Y_{it} = \beta_0 U_{it} + \beta_1^q \sum_{g \neq 1} G_{it} + \beta_2^q \sum_{g \neq 1} (G_{it} \cdot U_{it}) + X'_{it} \gamma + \alpha_i + \delta_t + \epsilon_{it} \hspace{1cm} (4.4) $$

where $Y_{it}$ is the unsecured debt level (in log) for individual $i$ in year $t$. $U_{it}$ is a dummy variable indicating unemployment and $G_{it}$ is a dummy variable indicating the households’ income quintile (the 1st quintile is the omitted baseline). $X'_{it}$ is a matrix of time- and individual-varying controls including household income, liquid assets, a set of education dummies, age squared, the number of children living at home, and family type. $\alpha_i$ is a unit-level fixed effect controlling for time-invariant unobserved heterogeneity across households, thereby identifying changes in debt based on changes in employment status within units. $\delta_t$ is a year fixed effect to control for aggregate time trends and $\epsilon_{it}$ is the idiosyncratic error term. Figure 4.5 shows the marginal effects of unemployment on debt by income quintiles, supporting the overall finding that it is higher-income households that borrow more in the
event of unemployment. Those in the forth and fifth income quintile have about 7% and 17% higher debt levels than those in the bottom quintile, respectively.

Figure 4.5: Marginal Effect of Unemployment on Unsecured Debt, by Income Quintile

Notes: Marginal effects plot with 95% confidence intervals based on model 4.4. Households in the bottom income quintile are the omitted baseline. N=29.6m.

4.1.2 Discussion

Weak employment protection and a flexible labor market make unemployment a common experience for many Danes, but comprehensive social policies help alleviate the financial burden of job loss. By design, the size of the financial gap is unevenly distributed across the income spectrum because unemployment benefits are more generous for lower-income households than for higher-income ones. The findings show that the size of the social policy shortfall is a significant driver of the extent to which households go into debt to bridge financial shortfalls. The replacement rate of unemployment benefits is much lower and the resulting social policy shortfall much larger for households in the upper part of the income distribution than for those in the bottom part, higher-income households borrow more during job losses.

In recent years, however, social policy reforms have reduced the overall generosity of unemployment benefits because of more restrictive eligibility criteria, lower benefit amounts, and shorter entitlement periods, thus increasing the social policy shortfall also for lower-income households (Abrahamson 2015). The steeper growth in debt-to-income ratios among lower- and middle-income households reflects in part a response to widening financial gaps.
caused by these social policy reforms and in part better access to credit and stronger incentives to take out loans, for example due to the introduction of interest-only loans in 2003.

The reasons why households borrow money and how the resulting debt is distributed across households have significant downstream consequences for households' exposure to economic risks. Despite recent social policy reforms, the Danish welfare state and its social safety net still protect economically-disadvantaged households from the economic and financial risks of disrupted employment patterns. Higher-income households, by contrast, receive less financial support through the welfare state and increasingly turn to credit markets as a private alternative to social policies. Growing debt leverage decreases households' financial leeway and increases their risk of default in the event of future income losses. As the event studies show, this is less likely because households tend to use credit to temporarily bridge financial gaps caused by unemployment. Moreover, most debt is concentrated among higher-income households who tend to be more economically-secure and thus have a lower risk of default. Yet the recent increase in debt leverage among lower-income households during unemployment can expose these households to economic risk in the future, even though the welfare state protect these individuals to much larger degrees compared to the U.S. as we will see below.

4.2 United States

The United States, much like Denmark, exemplifies a case of a flexible labor market and a permissive credit regime that grants households easy access to credit. The crucial difference, however, is that the American welfare addresses social risks such as unemployment or sickness to much smaller degrees than the Danish welfare state. As a result, disrupted employment patterns such as job loss and fluctuating work hours lead to larger social policy shortfalls and therefore pose a significant financial burden to many American households. Employment protection in the U.S. labor market is even weaker than in Denmark and results in shorter employment tenures and more frequent job switches (Golden 2015). For many households, it is also more common to take unpaid absence from work for reasons that in other countries would be covered, to varying degrees, by public policies or mandated upon employers, for example maternity or paternity leave, sick days, or personal days.

In this section, I show that many more households in the U.S. are affected by social policy shortfalls between exogenous income loss caused by disrupted employment patterns and the
welfare state's financial support. Drawing on unemployment and fluctuating work hours as important dimensions of the new employment reality, I demonstrate that many American households in the lower and increasingly in the middle rungs of the income distribution are tapping into credit markets and borrow money in response to social policy shortfalls. I further leverage exogenous variation in unemployment insurance benefits across states and over time, demonstrating that households that are dealing with the financial consequences of job loss and live in a less generous state such as Arkansas take on more debt to fill financial gaps than households that live in more generous states such as Massachusetts.

The incomplete and shrinking social policy safety net and the growing fragmentation of employment patterns that led to more volatile incomes have resulted in growing social policy shortfalls that increases the financial burden on many American households. In this situation, many families like Frank Walsh's draw on credit markets to fill the void left by the welfare state—a trend that is enabled and amplified by a credit regime that incentivizes lending to consumers and provides ample and easy access to credit.

4.2.1 Layoff from Work

In this section, I provide a detailed picture of when and under what circumstances households rely on borrowing to address income losses related to labor market shocks and changes in employment patterns. I use data from the Survey of Income and Program Participation (SIPP), a household-based survey designed as a continuous series of national panels of multi-year periods. Individuals and their household members are followed for one panel, which lasts three to six years, and are interviewed every four months for the length of the panel. Each interview ("wave") covers a four-month window and consists of a core questionnaire and rotating topical module. I combine the annual topic modules on assets and liabilities with the main survey for the panels of 1996, 2001, 2004, and 2008. The SIPP records households' unsecured debt, which includes credit card debt, unsecured loans from financial institutions, outstanding bills including medical bills, loans from individuals, and educational loans. Credit card debt accounts for about half of all unsecured debt across respondents.

Similar to the Danish case, I begin by comparing the debt burden of households where the household head is unemployed with households where the head is in full-time employment. The left panel of Figure 4.6 shows that unemployed households carry on average more debt relative to their income than employed households, especially since the 2000s. The differences to Denmark, where unemployed households only began to carry more debt than employed

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7 For a detailed description of the data and the construction of variables see Section A.1 in the Appendix.
Figure 4.6: Unsecured Debt-to-Income Ratios Among the Unemployed by Income in the U.S.

Notes: The figure shows unsecured debt as a share of disposable income. Income tertiles are based on household disposable income. Source: SIPP.

Households since the late-2000s, are even more pronounced in the right panel, which splits debt leverage among unemployed households by income. Since the mid-1990s, lower-income households where the head is unemployed carry more debt relative to their income than households in the middle- and upper segment of the income distribution. By 2010, the debt burden of unemployed lower-income American households was over 50% larger than that of unemployed higher-income households. These debt trajectories are in stark contrast to the Danish case, where over the last decades higher-income households were the ones that had the highest debt-to-income ratio, and point to important differences in the reasons why households in these countries borrow money.

In the following part, I subject these descriptive patterns to more rigorous empirical tests and evaluate to what extent American households across the income spectrum take on debt to address income losses caused by disruptions in employment patterns. I begin by estimating the borrowing response to layoff in the following fixed effects regression framework:

$$ Y_{it} = \beta U_{it} + X'_{it} \gamma + \alpha_i + \delta_t + \epsilon_{it} \quad (4.5) $$

where $Y_{it}$ is the unsecured debt level (in log) for individual $i$ in year $t$. $U_{it}$ is a dummy variable indicating layoff. $X'_{it}$ is a matrix of time- and individual-varying controls including household income, liquid savings, a set of education dummies, age squared, the number of
children living at home, family type, a dummy indicating home ownership, and a set of
dummies indicating race. \( \alpha_t \) is a unit-level fixed effect controlling for time-invariant unob-
served heterogeneity across individuals, thereby identifying changes in household debt based
on changes in employment status within units. \( \delta_t \) is a year fixed effect to control for aggregate
time trends and \( \epsilon_{it} \) is the idiosyncratic error term.

Table 4.2 shows the results from the baseline model and interaction models that allow
the effect of layoff on borrowing to vary by income and savings. Layoff has a strong positive

<table>
<thead>
<tr>
<th>Dependent variable: Total unsecured debt (log)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
</tr>
<tr>
<td>Layoff</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Total household income (log)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Liquid savings (log)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Layoff x Total household income (log)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Layoff x Liquid savings (log)</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Controls | ✓ | ✓ | ✓ |
Unit fixed effects | ✓ | ✓ | ✓ |
Year fixed effects | ✓ | ✓ | ✓ |
Observations | 361,830 | 361,830 | 361,830 |
R² | 0.72 | 0.72 | 0.72 |
Adjusted R² | 0.44 | 0.44 | 0.44 |

Note: Marginal effects of layoff on unsecured debt (log) relative to individuals who
are full-time employed. The results are based on equation 4.5. Robust standard
errors clustered at the household level. Full results appear in Table A.4.1 in the
Appendix. *p<0.1; **p<0.05; ***p<0.01.

effect on unsecured debt holding income and savings constant, suggesting that households
whose head becomes unemployed increase their debt levels by around 17%, compared to
those households where the head remained employed. With an average level of unsecured
debt in the sample of $21,430, this amounts to an increase of around $3,600. The model in
Column 2 allows the effect of unemployment on debt to vary by households' total net income.
The marginal effects plot in Figure 4.7 shows that households with smaller incomes borrow
more than those with higher incomes. The amount of savings, an important financial buffer
to address income shortfalls, has no significant or statistical effect predicting debt levels
(Column 3). One explanation for why savings are not moderating the borrowing response
to unemployment is their very low levels across income groups. Savings rates across many OECD countries have plummeted, but American households stand out with extremely low savings. Lusardi, Schneider and Tufano (2011) find that over 25% of respondents, including high-income households, could not come up with $2,000 within 30 days for an unanticipated expense such as a major car repair or a large medical co-payment and that another 19% could only cover such expense through payday loans or money from pawnshops. Almost half of all American respondents indicated that they could certainly or probably not come up with the financial means to address a financial shock of this magnitude. The Federal Reserve's annual report on the economic well-being of U.S. households echoes these findings, showing that in 2015, only 46% of adults in their survey could not cover emergency expenses of $400 without selling assets or borrow money.8

The findings thus far suggest that households borrow money to address financial shortfalls caused by unemployment. Among households that are affected by unemployment, it is lower-income households that take on the most debt relative to their incomes. The limited social safety is an important reason why households rely on credit to substitute for financial support from the government. In the next section, I test to what extent the size of the social policy shortfall and the resulting financial shortfall caused by unemployment is an important driver of households’ debt levels. I leverage the fact that unemployment benefits vary across states

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and over time, therefore providing differential income support to unemployed individuals and exposing them to various degrees of social policy shortfalls.

Variation in Unemployment Insurance Generosity Across U.S. States

Unemployment insurance (UI) alleviates the financial consequences of job loss by providing income transfers. In the U.S., states have a large degree of freedom to set benefit levels and maximum duration periods. As a consequence, the generosity of UI benefits and thus the social policy shortfall vary significantly across states and over time, resulting in strong differences in the financial burden that households have to shoulder. U.S. states therefore provide fertile grounds to shed light on the extent to which households across states go into debt to address the financial gaps resulting from these social policy shortfalls. I estimate the impact of variation in UI benefits on debt levels with a novel measure of unemployment insurance generosity based on legislative information on per-person benefit levels and maximum duration periods in each state. This measure is preferable to pure expenditure measures because it captures deliberate policy choices regarding the maximum amount and duration an unemployed person can receive benefits. Unlike expenditures, which are driven by both supply and demand, the UI benefit generosity measure is solely a supply-side measure and therefore well-suited to measure changes in social policymaking.

I collect state-level unemployment insurance benefit levels and duration periods from the U.S. Department of Labor’s Employment and Training Administration, which publishes annual overview documents of “significant provisions of state unemployment insurance laws.” These documents contain detailed state-level information on major categories of unemployment insurance laws, including benefits, coverage, and taxes. Specifically, they provide information on the weekly dollar amount and the maximum duration of unemployment insurance. I compute the final measure of maximum UI benefit generosity by multiplying the maximum weekly benefit amount with the maximum amount of benefit weeks for each state and year. This is the maximum unemployment insurance benefit a person can receive if

---


10 For more information see https://ows.doleta.gov/unemploy/laws.asp.

11 In cases where the maximum weekly benefit amount or the maximum number of weeks was provided as a range, I chose the upper limit. For example, in Massachusetts in 2000 the maximum weekly benefit amount ranged between $402 and $583 and the number of benefit weeks ranged from 10 to 30. In this and similar cases, I calculate the annual maximum UI benefit generosity based on the upper limits as $583 × 30 = $17,490.
she meets her state’s eligibility criteria. As Figure 4.8 shows, there is great variation in the distribution of UI benefit generosity across states over the period between 1996 and 2012.\textsuperscript{12}

Figure 4.8: Average Unemployment Insurance Generosity Across U.S. states, 1996-2012

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{unemployment_map}
\caption{Average Unemployment Insurance Generosity Across U.S. states, 1996-2012}
\end{figure}

Notes: The maximum UI benefit measure is calculated as the product of the maximum weekly benefit amount and the maximum amount of benefit weeks for each state and year.

Since states changed maximum weekly benefits and the maximum weeks of UI benefits at different times, the variation across states and over time in this UI generosity measure offers an ideal identification strategy to estimate whether households where the household head becomes unemployed borrow more money in states where UI benefits are less generous. This strategy assumes that changes in UI generosity are exogenous to households’ borrowing decision in the case of unemployment. One concern would be that variation in UI generosity is driven by states’ economic conditions such as economic booms that jointly influence borrowing choices, unemployment rates, and benefit levels. The inclusion of household-level fixed effect lessens these concerns since I identify the effect of UI generosity on unsecured debt conditional on any given household member switching into unemployment, thereby leveraging within-household variation. I estimate the effect of job loss on unsecured debt in states with different levels of UI generosity in the following difference-in-differences model:

\begin{equation}
Y_{it} = \beta_1 U_{st} + \beta_2 E_{it} + \beta_3 (U_{st} \cdot E_{it}) + X_{it}'\gamma + \alpha_i + \delta_t + \epsilon_{ist}
\end{equation}

\textsuperscript{12}Figure A.4.2 in the Appendix shows variation within each state.
where \( Y_{it} \) is the unsecured household debt (log) of individual \( i \) at time \( t \). \( U_{st} \) is the maximum amount of per-capital unemployment insurance benefits in state \( s \) at time \( t \), \( E_{it} \) is a dummy variable indicating whether individual \( i \) received unemployment benefits in year \( t \). Since not all unemployed individuals receive UI benefits, this approach ensured that we estimate the effect among those who are actually receiving benefits. \( X'_{it} \) is a matrix of individual- and state-level controls. \( \alpha_i \) and \( \delta_t \) capture unit and year fixed effects. Standard errors are clustered at the state level to allow for correlations within states and over time. Table 4.3 presents the results of different model specifications.

**Table 4.3: Marginal Effects of Unemployment on Unsecured Debt, by UI Generosity**

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>( \text{Unsecured debt (log)} )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>3.95*</td>
</tr>
<tr>
<td></td>
<td>(2.09)</td>
</tr>
<tr>
<td>Maximum UI benefits (log)</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>(0.24)</td>
</tr>
<tr>
<td>Unemployed x Maximum UI benefits (log)</td>
<td>-0.38*</td>
</tr>
<tr>
<td></td>
<td>(0.21)</td>
</tr>
<tr>
<td>Limited controls</td>
<td>✓</td>
</tr>
<tr>
<td>Full set of control</td>
<td>✓</td>
</tr>
<tr>
<td>Unit fixed effects</td>
<td>✓</td>
</tr>
<tr>
<td>Year fixed effects</td>
<td>✓</td>
</tr>
<tr>
<td>Linear time trends</td>
<td>✓</td>
</tr>
<tr>
<td>Observations</td>
<td>239,294</td>
</tr>
<tr>
<td>R²</td>
<td>0.72</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.47</td>
</tr>
</tbody>
</table>

*Note: The models are based on equation 4.6. Robust standard errors are clustered at the state level and reported in parentheses. Column 1 is the baseline model without controls, column 2 adds a set of unit-level controls, and column 3 additionally adds income quintile dummies. Column 4 adds state-level linear time trends. The full models are available in Table A.4.2 in the Appendix. *p<0.1; **p<0.05; ***p<0.01.*

Column 1 shows the baseline effect with unit- and year-fixed effects without any covariates. The generosity of UI benefits negatively influences debt levels of households whose head becomes unemployed. This effect is amplified when a limited set of controls is included (column 2), excludes income as a control because it is affected by the treatment status. But since income may also be correlated with debt and employment status, the model in Column 3 adds dummies for income quintiles. The results remain virtually the same. Column 4 adds state-specific time trends, allowing for linear slow-moving changes over time that are specific to a given state. To interpret the coefficients from the interaction model in Col-
Table 4.3. The omitted baseline is households where the head remains full-time employed. The dependent variable is unsecured household debt (log). N=238,467.

Figure 4.9 plots the marginal effects of unemployment on debt for different levels of unemployment insurance generosity. Unemployed individuals who live in states where UI benefits are less generous borrow more money than those who live in states where benefits are more generous, indicating that credit substitutes for unemployment insurance benefits. In substantive terms, an increase in average unemployment benefits by $2,000 (about a 20 percent increase from the samples' average maximum UI benefits of $9,782) leads to a decline in household debt levels by almost nine percent or about $1,900. The findings suggest that households borrow money to fill the financial gap left by the social policy shortfall and use credit as a substitute for government transfers. Put differently, a more generous support net can alleviate households' need to draw on credit to address financial gaps.

4.2.2 Fluctuations in Work Hours

Job loss is one of the most important drivers of income losses, but irregular work hours and interrupted employment schedules have become more common in the U.S. and, increasingly, in other countries (see Chapter 2 and, for example, Eichhorst and Marx (2016); Golden (2015)). In 2012, around one-third of SIPP panelists reported that they worked less than 35 hours per weeks. These non-standard employment patterns increase the financial burden on
households through two channels. First, earnings become more volatile as individuals switch jobs more frequently and experience short periods of unemployment. Second, disrupted employment patterns can make individuals ineligible for social benefits because they do not meet rigid eligibility criteria (see McHugh and Kimball 2015). A recent study of low- and middle-income Americans shows that about half of households' income volatility was due to variation within the same job and not driven by job losses (see Morduch and Schneider 2017, ch. 1 & 3). Other research by the JPMorgan Chase Institute, drawing on data of over 2.5m financial transactions between 2012 and 2014, demonstrates that income volatility is prevalent across all rungs of the income distribution. Almost half of all individuals in their data experience a change in income between 5% and 30% annually and, notably, all individuals except the top quintile do not have sufficient liquid savings to address those fluctuations. For example, their findings suggest that middle-income households would need about $4,800 in liquid savings to address their income fluctuations but only have about $3,000 as savings cushion (see Farrell and Greig 2015, p. 16). Variation in hourly pay, shorter work hours, and periods of unpaid absence from work are among the chief reasons besides unemployment why earnings are now more volatile. What separates this type of income volatility from the one caused by unemployment is that in the U.S. there is no social safety net in place that can alleviate the financial burden on households. This leaves households with an even larger social policy shortfall than in the case of unemployment. With little savings at their disposal, I expect that many households therefore draw on credit markets and go into debt to address these financial gaps.

Based on the SIPP data, I find that households with a household head working less than 35 hours per week carry on average around 38% (±13%) more debt than households where the head is working full time \((p < 0.01, N=185,468)\). Yet there are many reasons for shorter and fluctuating work hours. Some individuals deliberately choose to work less than 35 hours per week, while others find themselves with no other choice when full-time jobs are not available, when jobs are paid by the hour and working time is cut, or when personal circumstances prevent full-time work. The SIPP asks respondents about their reasons for working shorter hours, which allows me to distinguish those who voluntarily work shorter

13 More information on this research project see the Financial Diaries' website at http://www.usfinancialdiaries.org/.
14 See also Farrell and Greig (2016).
15 Households may be eligible for the Supplemental Nutrition Assistance Program (SNAP, formerly known as "food stamps"), but this is no social policy program that is specifically designed to counter the consequences of these "new types" of social risks.
16 From a regression model with unit- and time fixed effects as displayed in Table A.4.3 in the Appendix.
hours from those who do so involuntarily. Figure 4.10 tracks changes in debt-to-income ratios over time for households whose head indicates that he or she works less than 35 hours per week for a given reason. For comparison, the gray lines show the debt-to-income ratio for households where the head is full-time employed. Individuals with shorter work hours due to deliberate choices (“content with part-time job”) are not carrying more debt relative to income than individuals working full-time. Instead, it is households where the head is temporarily unable to work full-time that have the largest debt-to-income ratios and saw the strongest increase in this ratio over the last two decades. Much like in the case of unemployment, credit markets have become an important instrument to address income volatility in light of shorter or fluctuating work hours.

These findings also shed doubt on arguments that claim that rising debt levels are the consequence of conspicuous consumption and attempts to “keep up with the Joneses.” If this were the case, the debt leverage should be higher for households that voluntarily work shorter hours because these households, according to those arguments, need to finance their

---

Notes: The figure shows the ratio of unsecured debt to disposable income for households whose head indicates one of the displayed reasons for working less than 35 hours per week. The gray lines overlay the debt-to-income ratio for households with a full-time employed household head. Source: SIPP.

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17 On conspicuous consumption see, for example, Frank, Levine and Dijk (2014). On arguments that middle-class Americans finance their conspicuous consumptions with debt see, for example, Christen and Morgan (2005); Frank (2010).
consumption by taking on more debt. This is not the case. To the contrary, debt leverage is higher for households where the head is involuntarily working shorter hours, suggesting that credit helps households address income volatility during periods of temporary declines in work hours. In Chapter 5, I further unpack the reasons for working shorter hours and unpaid absence from work and their effect on households’ debt leverage.

4.2.3 Discussion

For many American households, the financial burden of disrupted employment patterns has grown considerably over the past decades. Fluctuating and irregular work schedules, shorter work hours, and frequent periods of unemployment make earnings much more volatile and often lead to significant income losses. The rise in jobs with no or limited benefits make American households even more vulnerable to economic and financial shocks. But the U.S. welfare state only covers a small set of these risks and provides limited and often declining financial support either because new types of jobs deliberately exclude individuals from the public safety net, because benefits have been cut and eligibility criteria restricted, or because policymakers failed to adapt existing policies to new labor market realities and let policies drift. The result is a rising gap between the financial needs of households that experience income losses and the financial support they receive from social policies. In other words, the social policy shortfall is growing and no longer only affects lower-income households but increasingly expands into middle-income segments of society.

In light of rising financial shortfalls, the American credit regime with easily available credit helps households bridge income gaps and has turned into a private alternative to publicly-financed social policies. The findings suggest that job loss or fluctuating and shorter work hours add a significant financial burden on households’ shoulder, and borrowing has become a critical instrument for lower- and increasingly middle-income households to fill those shortfalls. Social policies and households’ debt levels are intertwined in ways that need to receive more attention. Drawing on variation in the generosity of unemployment insurance (UI) benefits across states and over time, I show that households where the household head loses his or her job borrow significantly more in states that have less generous UI benefits. This suggests that credit replaces financial transfers from the public social safety net. From a public policy perspective, one can argue that more generous social policies can reduce households’ need to draw on credit markets.

The comparative perspective yields important insights: Denmark and the U.S. share flexible labor markets and permissive credit regimes that grant households easy access to

170
credit, but disruptions in employment patterns and irregular and non-standard contracts are more prevalent in the U.S. More importantly, however, are differences in the social policy regimes that influence the size of the social policy shortfall and its variation across households. The Danish welfare state protects lower-income households to much larger degrees than the American welfare state, resulting in very different financial shortfalls for lower-income households in both countries. In both countries, a larger social policy shortfall leads to more borrowing, but it is different types of households that go into debt. Among households with unemployed members, it is higher-income Danish households and lower-income American households that carry the most debt relative to their incomes.

4.3 Germany

The Germany case provides an important comparison to the U.S. and Denmark. It exemplifies a restrictive credit regime that favors lending to business instead of consumers, making it more difficult for households to borrow. The labor market is segmented into a protected core of workers with long-term stable employment trajectories and an exposed periphery of workers with unstable and increasingly marginal forms of employment. Policymakers have introduced labor market and social policy reforms, in particular since the early 2000s, in an attempt to deregulate labor markets and introduce more flexibility. These reforms have exacerbated the dualization of the German labor market mostly by expanding temporary and marginal jobs.

German households on average have lower debt levels and debt-to-income ratios than American or Danish households (cf. Figures 3.6 and 3.7 in Chapter 3). This is in part driven by the more restrictive credit regime and in part by weaker incentives for individuals to borrow money. I therefore expect that German households are less likely to go into debt to address income losses and social policy shortfalls as are households in Denmark and the U.S. To empirically test this proposition, I draw mainly on data from the German SAVE panel, a longitudinal study that was designed in 2001 in response to the lack of adequate data on assets and liabilities in existing panel surveys, most notably the German Socio-Economic Panel (SOEP) (see Boersch-Supan and Essig 2005).\textsuperscript{18} For some descriptive statistics, however, I rely on the SOEP since its sample size is larger than the SAVE study’s sample and representative for the German population and thus yields more precise estimates.\textsuperscript{19}

\textsuperscript{18}The SOEP only collects data on assets and liabilities in three wealth supplements in 2002, 2007, and 2012 and is therefore not suited to analyze the borrowing response following an income loss.

\textsuperscript{19}For data description and variable construction see section A.1 in the Appendix.
4.3.1 Unemployment

As before, I begin by comparing the debt leverage of households where the household head is unemployed with those where the head is in full-time employment. The left panel of Figure 4.11 shows that debt levels relative to incomes are much lower in Germany and have remained fairly stable over time. In the early 2000s, the debt ratios of unemployed households were similar to those of employed households but have declined slightly over the course of the following decade. Among households with an unemployed household head,

Figure 4.11: Unsecured Debt-to-Income Ratios Among the Unemployed by Income in Germany

Notes: The figure shows unsecured debt as a share of disposable income. Marginally-employed individuals are those who work in unstable jobs, mini- or midi-jobs. Mini-jobs are forms of short-term marginal employment with low pay below €450 per month. These jobs are exempt from tax and social insurance contributions and employees are not entitled to pension claims and only limited unemployment benefits. Midi-jobs allow earnings between €450 and €850 and have reduced social insurance contributions (see Chapter 2). Income tertiles are based on household disposable income. Source: SOEP general survey and Wealth Supplements (2002, 2007, 2012).

middle-income households have the largest debt burden, but the size of the debt burden and its differences across households are small compared to Denmark or the U.S. These patterns are the result of Germany’s restrictive credit regime, which makes credit, especially for households that have unemployed members or no secure income, much harder to obtain. Credit cards that offer lines of credit and only require a minimum payment at the end of the billing cycle—an important financial lifeline for many Americans—are less common
in Germany and rarely used. Instead, overdraft facilities on checking accounts are more important for many German households. These overdraft lines operate much like a credit card and allow account holders to overdraw their accounts up to a fixed limit (which is based on income).

Since German households face a restrictive credit regime that makes credit much harder to secure, I expect to see a much more muted borrowing response to income losses from unemployment compared to the Danish or American case. I begin by estimating how various degrees of labor market attachment of the household head are associated with changes in unsecured debt in the following fixed effects model:

\[ Y_{it} = \sum_{e} \beta_{e} E_{eit} + X'_{it} \gamma + \alpha_{i} + \delta_{t} + \epsilon_{it} \] (4.7)

where \( Y_{it} \) is the unsecured debt (in log) for household head \( i \) in year \( t \). \( E_{eit} \) is a vector of employment statuses of individual \( i \), including unemployment, part-time 15-35 hours/week, part-time less than 15 hours/week, and sometimes employed. Employed individuals serve as the omitted baseline. \( X'_{it} \) is a matrix of time-varying individual-level covariates and \( \alpha_{i} \) and \( \delta_{t} \) are unit and year fixed effects, respectively. Table 4.4 shows the marginal effects of different employment statuses on unsecured consumer debt.

The baseline model without covariates in Column (1) shows that there is a mild but statistically insignificant increase in debt among those who are unemployed and work part-time with 15-35 hours per week. Adding a full set of covariates in Column (2), the effect size increases slightly but still remains statistically insignificant. Households in the sample hold an average of around €2,115 (about $2,375) in unsecured debt. This is a very small amount compared to other countries. Shorter work hours in the U.S. are strongly associated with more borrowing, especially in cases where they are the result of involuntary choices. The German data does not allow me to distinguish the reasons for working shorter hours, but, regardless of the reasons, the findings suggest that in Germany shorter work hours are not associated with higher debt.

I then estimate the effect of income loss due to unemployment on unsecured debt in the following model:

\[ Y_{it}^{D} = \beta_{1} U_{it} + \beta_{2} I_{it} + \beta_{3} (U_{it} \cdot I_{it}) + X'_{it} \gamma + \alpha_{i} + \delta_{t} + \epsilon_{it} \] (4.8)

---

20 The vast majority of German credit cards are more akin to charge cards where one can spend money up to a limit over the billing cycle but has to pay the outstanding balance by the end of the billing cycle in full. On the use of cash versus credit card see, for example, Kalckreuth, Schmidt and Stix (2014).
where $Y_{it}$ is unsecured debt (in log) for individual $i$ in year $t$. $U_{it}$ is a dummy indicating if the household head $i$ is unemployed and $I_{it}$ is household income. The results are shown in Table 4.5. Column (1) shows the bivariate model without control variables and similarly finds a mild positive but statistically insignificant effect. Adding a set of control variables (column (2)) increases the effect size slightly but leaves the findings statistically insignificant. Column (3) allows the effect of unemployment to vary by households' disposable income and shows that income does not influence debt levels among the unemployed. These findings can be explained by the design of Germany's unemployment insurance system, which only mildly differentiates benefits by income groups, and by Germany's credit regime, which restricts access to credit, particularly to households where one member of the household is unemployed and that cannot show reliable future income streams. The lack of borrowing by households where the head works shorter hours or loses his or her job is in stark contrast to the U.S. and Danish case where households, depending on the size of the shortfall they experience, take on debt in address financial shortfalls. In the following section, I show if and to what extent overdraft facilities, an important financial lifeline akin to US-style credit cards, help German households to bridge income gaps.
Table 4.5: Marginal Effects of Unemployment on Unsecured Debt

<table>
<thead>
<tr>
<th></th>
<th>Dependendent variable:</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unsecured debt (log)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>0.36</td>
<td>0.39</td>
<td>0.36</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.26)</td>
<td>(0.26)</td>
<td>(1.85)</td>
<td></td>
</tr>
<tr>
<td>Unemployed x Household income (log)</td>
<td>0.01</td>
<td></td>
<td>(0.18)</td>
<td></td>
</tr>
<tr>
<td>Controls</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit fixed effects</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Year fixed effects</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>6,102</td>
<td>6,102</td>
<td>6,102</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.61</td>
<td>0.61</td>
<td>0.61</td>
<td></td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.51</td>
<td>0.51</td>
<td>0.51</td>
<td></td>
</tr>
</tbody>
</table>

*Note:* Results from a fixed effects model based on equation 4.8. Robust standard errors clustered at the household level. The omitted baseline are households where the household head is full-time employed. Full results appear in Table A.4.5 in the Appendix. *p<0.1; **p<0.05; ***p<0.01.

Overdraft Facilities: Germany's Hidden Credit Market

The evidence thus far suggests that in Germany’s restrictive credit regime, households rarely tap into formal credit markets and borrow money to address income gaps caused by disrupted employment patterns. In this section, I explore the role of overdraft facilities, which can be an alternative to formal lines of credit to mitigate financial shocks. The SAVE study contains a question about individuals’ use of overdraft facilities. I create a binary indicator of whether respondents state they “often or always” use their overdraft facilities as opposed to “never.” I then estimate whether households where the household head becomes unemployed use overdraft facilities to address income losses in the following mixed effects logistic regression:

\[
Pr(Y_{it} = 1) = \text{logit}^{-1}( \beta_0 + \beta_1 \cdot U_{it} + \sum_{k} \beta_2^k \cdot I_{it} + \beta_3^k \cdot (U_{it} \cdot \sum_{k} I_{it}) + X'_{it} \gamma + \alpha_{i[t]} + \alpha_{t[i]} )
\]

where \(Y_{it}\) is the binary response to whether individual \(i\) uses her overdraft facility in year \(t\), \(U_{it}\) is a dummy indicating unemployment, \(I_{it}\) is either a vector of dummies for income or savings quintiles, and \(X'_{it}\) is a matrix of individual-level covariates. \(\alpha_{i[t]}\) and \(\alpha_{t[i]}\) are random effects for individuals and years, respectively. The model combines fixed characteristics of

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21 On the role of overdraft facilities in Germany see, for example, Deutsche Bundesbank. 2015. Zahlungsverhalten in Deutschland 2014. p. 20.
each individual and random intercepts for individuals and years, allowing correlations among
the latter.

The panels in Figure 4.12 plot the predicted probabilities of using an overdraft facility
during unemployment for different income and savings groups. The left panel shows that

Figure 4.12: Predicted Probabilities of Using Overdraft Facilities by Employment Status

Notes: The panels show predicted probabilities with 95% confidence intervals from mixed effect
logistic regression models based on equation 4.9. Tables A.4.6 and A.4.7 in the Appendix show
the regression results for income and savings groups, respectively.

households in the bottom 60th percentile of the income distribution where the head becomes
unemployed have a higher probability of drawing on overdraft facilities than households with
a full-time employed head. The differences between employed and unemployed households
are about 14 percentage points for the bottom 40% of the income distribution and around
26% for the 3rd income quintile, suggesting that lower-income households and in particular
middle-income ones rely on overdraft facilities in the case of unemployment. The right panel
shows the results from the model based on savings dummies, suggesting that savings work as
an alternative coping mechanism to deal with income losses during unemployment. House-
holds where the head becomes unemployed and that have no savings have more than 70%
probability of using overdraft facilities, almost 14 percentage points higher than households
with a full-time employed head. For households with higher levels of savings, the differences
between employed and unemployed groups disappear.

While the findings suggest that low- and middle-income households and particularly those
who have no or only few savings draw on their overdraft facilities during unemployment, the
overall magnitude of such borrowing is very small. The SAVE panel does not ask individuals
about the amount of overdraft they have used, but another survey found that 18% use an average of €500–1,500 in their overdraft facility and only 14% use more than €1,500 (the highest category in that survey).22

4.3.2 Discussion

The Germany case shows that the nature of the credit regime influences whether households can access and will use credit to address financial shortfalls. In contrast to Denmark and the U.S., the German credit regime restricts access to credit for households, channels capital flows toward the business sector and incentivizes households to save. Average debt levels relative to incomes are much smaller in Germany than in the two other cases, reflect significant differences in credit regimes. With credit less easily available, households rarely tap into formal credit markets and borrow money to address income losses caused by unemployment or shorter work hours. Households where the head is unemployed or marginally employed carry similar or even smaller levels of debt than households with a full-time employed head. Unlike in the case of Denmark and the U.S., the distribution of debt holdings among unemployed households does not vary by income. Overdraft facilities, by contrast, whose function and use resemble US-style credit cards, are an alternative source of financial liquidity in the case of unemployment but their importance should not be overstated because households use it for relatively small amounts. German households are much more likely to internalize the financial burden of job loss or shorter work hours, for example by drawing on savings that are much higher than in other countries.

The structure of the German labor market, segmented into a protected core of workers with stable, long-term employment patterns and comprehensive benefits and an exposed periphery with marginal and increasingly precarious jobs with limited benefits, reinforces these borrowing patterns. Formal lending in Germany is strongly determined by the prospective borrower’s future income stream. This makes it especially hard for households that experience unemployment or temporary or marginal forms of employment. While the Danish and American labor markets are much more flexible and fluid, the protected core of the German labor market still enjoys long-term employment tenure with stable incomes. But for individuals with jobs in the exposed periphery, employment patterns and incomes became more disrupted and volatile. Social policy and labor market reforms in the early 2000s have widened the gap between households’ financial needs and the welfare state’s financial support

as benefits have been cut while unemployment and job switches became more common. For many households, social policy shortfalls have increased.

In the final two sections of this chapter, I show how political choices in both the social policy regime and the credit regime influence households' debt levels. First, I study the effect of cuts in social policies on households' borrowing behavior in the context of a restricted credit regime. Leveraging the Hartz labor market reform in Germany in 2005, households experienced a larger social policy shortfall but did not borrow to address financial shortfalls because of limited access to credit. Second, I draw on a quasi-natural experiment and study the effect of a significant and unexpected increase in credit supply on borrowing by previously liquidity-constrained households. I use the introduction of home equity loans in Denmark in 1992 to show that households where the head became unemployed and that previously had little savings to deal with income losses began to draw heavily on these loans to address financial gaps.

4.4 Welfare State Retrenchment and Easier Access to Credit: The Impact of Policy Reforms on Household Debt

Political choices can influence the relationship between social policies and household debt. In this section, I first show how individuals deal with cuts in social policies after the Hartz reforms in Germany in 2005. As this reform occurred in a restrictive credit regime, I expect that affected individuals did not borrow money to compensate for financial gaps. I then turn to the politics of credit and study the impact of an exogenous expansion of access to credit in Denmark. In 1992, the Danish government for the first time allowed homeowners to use home-equity loans and borrow against the value of their house. Households that previously had little savings to deal with income losses began to draw heavily on these loans to address financial shortfalls.

4.4.1 The 2005 Hartz Labor Market Reform in Germany: Cuts in Social Policies

In this section, I study the impact of a far-ranging social policy and labor market reform package in Germany that significantly cut social benefits. But although these reforms led
to growing financial gaps, Germany’s restrictive credit regime made it very difficult for households to borrowing money to address financial shortfalls.

In the early 2000s, the German government adopted a range of labor market and social policy reforms to tackle high unemployment rates and an ailing economy by addressing what had been diagnosed as the root cause: the inflexible and rigid labor market (Dustmann et al. 2014). In a series of reforms, implemented in four consecutive laws named Hartz I through IV after the Chairman of the reform commission, the government enacted one of the most far-reaching labor market and social policy reform agendas of Germany’s postwar welfare state. At the heart of the labor market reform packages was the fourth labor market law, Hartz IV, which adopted a set of activation policies for unemployed individuals, especially those who had been unemployed long-term (over one year) and, most importantly, replaced earnings-related unemployment benefits with a means-tested flat-rate unemployment benefit scheme. The reform, both prominent and controversial, reduced benefit levels for new and incumbent unemployment insurance recipients who had been unemployed for more than 12 months.

Under the old system prior to the reform, unemployed individuals could rely on a two-layered social policy scheme: individuals who had worked at least 12 months over the preceding three years were eligible to receive unemployment insurance benefits (Arbeitslosengeld) that replaced 60% of their prior earnings (or 67% for those with dependent children). Benefit duration was dependent on age and work experience and ranged from a maximum of 12 months for workers under 45 years to 32 months for those over 57 years. After these benefits were exhausted, the unemployed could apply for long-term means-tested unemployment assistance (Arbeitslosenhilfe) that replaced 53% of their prior earnings (or 57% for those with dependent children) paid out indefinitely. Those who were ineligible for either unemployment benefits or unemployment assistance could draw on tax-funded means-tested social assistance (Sozialhilfe).

The Hartz IV reform law, the centerpiece of the labor market reform agenda, merged long-term unemployment and social assistance, and set the benefit amount at the lower level of social benefits (Arbeitslosengeld II). Eligibility criteria were tightened and the amount and duration of unemployment benefits sharply reduced. Long-term UI benefits are no longer related to prior earnings but consist of flat-rate benefit payments (€345 per month in West-

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23 For an overview of the reform package and its impact on labor market outcomes see, for example, Eichhorst, Kaufmann and Konle-Seidl (2008); Jacobi and Kluve (2006); Krebs and Scheffel (2013).

Germany and €331 in East-Germany in 2005) with additional benefits for dependent spouses and children and subsidies for rent and heating. Notably, the reform—effective as of January 1, 2005—applied to all unemployed individuals and incumbent benefit recipients were not grandfathered in.

The shift in benefit calculation from a wage-index system to flat rate payouts created a steep loss in unemployment benefits, particularly among higher-income earners who had received higher unemployment benefits under the old system. In 2004, the year prior to the reform, 52% of all unemployed individuals or about 1.7 million individuals were long-term unemployed for 12 months or more, one of the highest rates in the OECD (the OECD average in that year was 31%).25 The Hartz IV reform therefore affected a large share of unemployed individuals.

Growing Social Policy Shortfalls in a Restrictive Credit Regime

The implementation of the Hartz IV law on January 1, 2005, led to a significant drop in unemployment benefits among new and incumbent benefit recipients and therefore increased the social policy shortfall. To estimate if and how affected individuals responded to the reform by borrowing money to address the financial gap, I compare debt trajectories of employed and unemployed individuals before and after the reform.

Figure 4.13 shows the differences in unsecured debt between employed and unemployed individuals before and after the Hartz labor market reform was implemented based on the raw SAVE survey data. Prior to the reform, employed individuals tend to have slightly higher levels of debt than unemployed individuals, although the differences are barely statistically significant. Important for the following analysis, debt trajectories across the two groups follow parallel trends and lessen concerns about pre-treatment confounding differences in debt of employed and unemployed individuals before the reform was enacted. Yet once the reform took effect in 2005, debt levels among the unemployed dropped significantly, reversing the patterns of debt holdings. In the years following the reform, unemployed individuals consistently have less debt than employed individuals.

To corroborate these findings in a statistical framework, I estimate how the cuts in unemployment benefits influenced borrowing choices of unemployed individuals in a difference-in-difference (DID) framework. The data unfortunately do not allow me to distinguish between short- and long-term unemployed; I only observe whether individual i is unemployed or not.

Figure 4.13: Differences in Unsecured Debt between Unemployed and Employed Individuals Before and After Hartz Labor Market Reform

Notes: The differences in unsecured debt are based on raw SAVE data.

The marginal effects of the Hartz reform on debt therefore capture the average treatment effect among all unemployed individuals. The DID model is as follows:

$$Y_{it} = \beta_1 U_{it} + \beta_2(U_{it} \cdot \text{post}) + X'_{it} \gamma + \alpha_i + \delta_t + \epsilon_{it}$$ (4.10)

where $Y_{it}$ is unsecured debt (log) of individual $i$ at time $t$. $U_{it}$ is a dummy variable indicating unemployment and $\text{post}$ is a dummy variable for post-Hartz IV reform status coded one for the years from 2005 onward and zero before. $X'_{it}$ is a vector of time-varying individual-level covariates. $\alpha_i$ is a unit-level fixed effect controlling for any time-invariant unobserved factors, $\delta_t$ is a period fixed effect to control for common trends, and $\epsilon_{it}$ is the idiosyncratic error term. $\beta_2$ captures the DID effect of the Hartz IV reform on debt levels among the unemployed.

While the set of individual and year fixed effects controls for time-invariant unobserved factors of individuals and common time trends, employed and unemployed individuals may still differ along other dimensions. I further use entropy balance to adjust remaining imbalances between employed and unemployed respondents (Hainmueller 2012).\(^{26}\)

Table 4.6 shows the effect of cuts in unemployment benefits due to the reform on borrowing by the unemployed. Although the reform brought a significant loss in benefits among

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\(^{26}\)Respondents are balanced on age, education, number of children living in household, number of people in household, and marital status.
Table 4.6: Marginal Effects of Hartz IV Reform on Unsecured Debt

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployed</td>
<td>1.71***</td>
<td>1.89***</td>
<td>1.84***</td>
</tr>
<tr>
<td></td>
<td>(0.62)</td>
<td>(0.66)</td>
<td>(0.66)</td>
</tr>
<tr>
<td>Unemployed x Period_post</td>
<td>-1.19**</td>
<td>-1.26**</td>
<td>-1.26**</td>
</tr>
<tr>
<td></td>
<td>(0.58)</td>
<td>(0.61)</td>
<td>(0.62)</td>
</tr>
<tr>
<td>Full set of controls</td>
<td>✓</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>Restricted set of controls</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Unit fixed effects</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Year fixed effects</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Observations</td>
<td>5,342</td>
<td>5,342</td>
<td>5,342</td>
</tr>
<tr>
<td>R²</td>
<td>0.64</td>
<td>0.64</td>
<td>0.64</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.53</td>
<td>0.54</td>
<td>0.54</td>
</tr>
</tbody>
</table>

Note: Results from a fixed effects model based on equation 4.10. Robust standard errors are clustered at the household level. In columns 2 and 3, the data is adjusted for imbalances between employed and unemployed respondents using entropy balance based on age, education, number of children living in household, number of people in household, and marital status. Column (3) excludes income and savings as covariates because they may introduce post-treatment bias. The results remain virtually unchanged. The lower-order term Period\_post is a time-invariant indicator of reform status and is not identified in the presence of year fixed effects. Full results appear in Table A.4.8 in the Appendix. *p<0.1; **p<0.05; ***p<0.01.

The long-term unemployed, debt levels declined among the unemployed by over 70% in response to the Hartz IV reform. This effect is in stark contrast to the behavior of American households that borrow more in response to unemployment, particularly in states where unemployment insurance generosity is lower. The comparison between Germany and the U.S. also suggests that the structure credit regime and individuals' ease of credit access shape how households address financial gaps in light of different social policy regimes.

The Hartz reforms in Germany provide a fruitful policy experiment that shows how a restrictive credit regime prevents households from borrowing money despite a growing social policy shortfall.27 In the next section, I turn to the case of Denmark to study a policy reform that operated on the credit supply side.

27The data and this research design do not allow me to distinguish whether households would borrow if they had access to credit.
4.4.2 The 1992 Home Equity Reform in Denmark: Easier Access to Credit

In 1992, the Danish government introduced legislation that allowed lenders to offer home equity loans, thereby enabling homeowners to borrow against the value of their house without changing their wealth position. Prior to this reform, homeowners could not borrow against their house. Yet only homeowners who already had a significant portion of equity in their home could extract liquidity. This exogenous and unanticipated increase in credit supply for eligible households provides a natural experiment to causally identify the effect of easier access to credit on borrowing.

The home equity reform took effect on May 21, 1992 as part of a larger agenda of liberalizing financial markets and stimulating the ailing economy and allowed homeowners with sufficient equity to use initially up to 60% and since December 1992 up to 80% of their current real estate wealth as collateral for non-housing-related consumer loans. The reform has two useful features that make it attractive as an as-if random shock to credit supply. First, it was introduced quickly after a very brief discussion in the Danish parliament and not anticipated by the broader public. Second, the reform did not change homeowners’ wealth position and only affected the cost of credit. Since the amount of collateral that homeowners could use to borrow against was a function of the outstanding mortgage amount at the time of the reform, to large degrees determined by the time the house was purchased, we can rule out strategic behavior of homeowners or bias borrowing responses driven by wealth. Prior evidence suggests that this unexpected increase in liquidity had a significant effect and “unlocked” an average amount of home equity that could be used as collateral of about $30,000 (Jensen, Leth-Petersen and Nanda 2014), increased consumption over time (Leth-Petersen 2010), and reduce unemployment insurance uptake (Markwardt, Martinello and Sándor 2014). We should therefore expect that with easier access to credit, those who become unemployed will compensate their income loss by borrowing more, relative to those who remain employed. This comparison is important since households may use credit for various kinds of purposes unrelated to income loss. If the home equity reform allows eligible homeowners to tap into credit markets to increase spending, there should be no difference among employed and unemployed individuals, or even a stronger effect among the former, knowing that they have a stable job. Yet if those who lost income, for example due to

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28 Leth-Petersen (2010) shows that not even Danish newspapers reported about the reform until a month before the reform took effect in May 1992.
unemployment, are granted better access to credit, we would expect them to borrow more to compensate for income losses.

I used data on the entire Danish population four years before and after the reform, ranging from 1988 to 1996. I first define savings constraints as having liquid savings of less than one and a half month's worth of income in 1991, the year prior to the reform. This is a standard measure of savings constraints in the literature (see, for example, Johnson, Parker and Souleles 2006; Leth-Petersen 2010; Zeldes 1989). The distinction between liquid and illiquid savings is important since the former contains financial assets that households can immediately draw on, such as deposits in checking or savings accounts or stock ownership. Illiquid savings and assets more broadly such as pension funds or real estate can typically not be converted easily into money or only at large costs. Liquid savings are therefore an important financial cushion.

Figure 4.14 plots the average debt trajectory of unemployed and employed individuals who are either savings constrained or unconstrained, respectively, in the years before and after the reform. Individuals respond to the new possibility of taking out home equity loans by increasing their debt levels, but this occurs with a time lag of one to two years after the parliament passed the reform legislation. This delay can be explained by the time it takes for individuals to decide if they should make use of home equity lines and apply for them and for lenders to process these applications and grant lines of credit. Critical for the following

![Figure 4.14: Total Household Debt Before and After the Home Equity Reform, Raw Data](image)

Notes: Figure based on raw administrative register data. Error bars are not always clearly visible because of the high precision of the administrative data. N=16,762,242.
empirical strategy, debt levels follow a parallel trend across and within groups in the period before the reform.

I then estimate the effect of the home equity reform on total debt by savings-constrained homeowners who became unemployed in a triple difference-in-difference framework (DDD).\textsuperscript{29} Due to data constraints in the earlier years of the register data, I cannot distinguish between secured and unsecured debt and use total debt instead. This model takes the average change in debt levels for unemployed individuals among those who were savings-constrained (treatment group) and nets out changes in means for unemployed among those who were not savings-constrained (control group) and the change in means for employed individuals among those who were savings-constrained (treatment group). The DDD estimator controls for potentially confounding trends in changes in employment status of individuals across groups who are savings-constrained and those who are not that are orthogonal to the home equity reform as well as changes in employment status of individuals within savings constrained and unconstrained groups that might be related with group-specific factors influencing employment status, for example income or wealth.

Since unemployed and employed individuals might still differ along other dimension not taken care of by the DDD design, I use—as before—entropy balance to adjust remaining imbalances between employed and unemployed respondents (Hainmueller 2012).\textsuperscript{30} I implement the triple DDD model in the following fixed effects regression framework:

\[ Y_{it} = \beta_1 S_{i,91} + \beta_2 \text{post} + \beta_3 U_{it} + \beta_4 (S_{i,91} \cdot \text{post}) + \beta_5 (S_{i,91} \cdot U_{it}) \]
\[ + \beta_6 (\text{post} \cdot U_{it}) + \beta_7 (U_{it} \cdot \text{post} \cdot S_{i,91}) + X_{it}' \gamma + \alpha_i + \delta_t + \epsilon_{it} \]  \hspace{1cm} (4.11)

where $Y_{it}$ is total household debt (log) of individual $i$ at time $t$. $S_{i,91}$ is a dummy variable indicating if individual $i$'s household is savings constrained, defined as having liquid savings less than one and a half month’s income in the year prior to the reform (1991). post is a dummy indicating the post-reform period from 1992 onward, and $U_{it}$ is a dummy variable indicating if individual $i$ was unemployed in year $t$. $X_{it}'$ is a vector of time-varying individual-level covariates. $\alpha_i$ is a unit fixed effect controlling for any time-invariant unobserved factors among households, $\delta_t$ is a year fixed effect controlling for common shocks and trends, and $\epsilon_{it}$ is the idiosyncratic error term. $\beta_7$ is the coefficient of interest and captures the effect of

\textsuperscript{29}Figure ?? in the Appendix illustrates the intuition behind the triple difference-in-difference model.

\textsuperscript{30}Respondents are balanced on birth year, education (five levels), ZIP code, family type, number of children, and the gender of the household head.
easier access to credit among those who became unemployed and were savings constrained, relative to those who remained employed.

Panel (a) in Figure 4.15 shows that the increase in credit availability due to the home equity reform had a sizable effect on unemployed individuals who are savings constrained relative to employed individuals who are savings constrained. The reform nearly doubled the amount of debt carried by employed individuals but increased debt levels among unemployed individuals by more than three-times, both within the savings-constrained group. In other words, unemployed individuals borrowed 80% more than individuals who remained employed.\(^{31}\)

I further estimate a fully flexible and dynamic version of equation 4.11 to estimate the development of debt levels by interacting the dummies for unemployment and savings con-

\(^{31}\)Table A.4.9 in the Appendix shows the full set of models based on the unadjusted data as well as models based on the entropy-balanced data. The models based on the entropy-balanced data have slightly smaller values on the lower-order coefficients and the interaction terms, reducing the overall DDD effect. The substantive conclusion remains the same.
strains with year dummies (relative to the year prior to the reform) instead of pooling the pre- and post-reform periods. Panel (b) in Figure 4.15 shows that in the years leading up to the reform there is virtually no difference among savings constrained employed and unemployed individuals. Yet in the years after the reform, unemployed individuals began to borrow more relative to the pre-reform years and relative to employed individuals, suggesting that newly-gained access to credit provided an opportunity for unemployed individuals to address income losses.

4.5 Discussion

This chapter presents a range of micro-level evidence from Denmark, the U.S., and Germany that paints a cohesive picture of credit as a vital instrument for households to compensate for the first type of social policy shortfalls: the financial gap between unexpected income losses caused by unemployment and fluctuating work hours on the one hand and incomplete provision of financial support by the welfare state on the other. The comparative perspective of this chapter highlights that two factors shape the variation in household debt across and within countries: first, the size of the social policy shortfall, which determines households’ financial needs in light of involuntary disruptions of employment patterns. Second, the structure of the credit regime and the degrees to which households have access to credit and can borrow money to bridge financial gaps.

The situation of Frank Walsh and the $20,000 he ran up in credit card debt to make ends meet after he became unemployed is emblematic of many households in the U.S. And yet, it is quite different from the experience of unemployment among households in Denmark and Germany. It is the combination of disrupted employment patterns and a declining social safety net that forces many households like Frank Walsh’s to turn to credit markets to compensate for financial shortfalls in light of limited financial alternatives. In Denmark, a country with weak employment regulation, a flexible labor market, and a permissive credit regime that incentivizes lending to households, the combination of disrupted employment patterns and comprehensive financial support from the welfare state limits the social policy shortfall to upper-middle-income and higher-income households. These households have easy access to credit and mitigate the social policy shortfall by temporarily borrowing money. For lower-income households, by contrast, the Danish welfare state provides sufficient financial resources and protection from risk and lessens the need to borrow money. Recent welfare reforms, however, have exposed lower-income households to growing social policy shortfalls.
and increased their reliance on debt. Compared to the U.S., risk protection by social policies is still greater.

By contrast, in the U.S. the labor market is similarly flexible but employment protection is even weaker. Employment patterns are more unstable and increasingly more precarious as households not only face more frequent spells of unemployment but also irregular and shorter work hours. The welfare state, however, addresses a much smaller share of these employment disruptions and resulting income losses and provides less financial support compared to the Danish case. As a result, many households ranging from the bottom to the middle of the income distribution, experience larger social policy shortfalls and growing financial burdens. In the U.S., permissive credit markets are also an important source for households to stem financial gaps, but unlike in Denmark, it is mostly lower- and middle-income households that borrow money to compensate for social policy shortfalls. Germany provides an important comparative case to both Denmark and the U.S., emphasizing the role of the credit regime and households’ access to credit. Regardless of income, German households rarely tap into credit markets when they face income losses caused by disrupted employment patterns. If anything, they rely on small amounts from their overdraft facilities. To summarize, Figure 4.16 compares debt-to-income ratio among unemployed individuals in the three country cases.

Figure 4.16: Unsecured Debt-to-Income Ratio among the Unemployed, by Income Group

Note: The figure shows unsecured debt as a share of disposable income. For more details and data sources see notes for the respective figures under each country section.

Finally, this chapter draws attention to political choices in the realm of social and credit policies that influence households’ debt levels. In the U.S. case, I use an original dataset
on the generosity of state-level unemployment insurance benefits to show that individuals struck by unemployment borrow more in states with less generous benefits. In the Danish case, I draw on a natural experiment and leverage the unexpected introduction of home equity loans in 1992. I demonstrate that households that previously had little savings to deal with income losses began to draw heavily on these loans to compensate for financial shortfalls. In both countries, permissive credit regimes provide easy access to credit and enable households to borrow money to compensate for the social policy shortfall. Lastly, I show that the Hartz labor market reforms in Germany in 2005, which sharply cut long-term unemployment benefits and led to a considerable increase in the social policy shortfall, lowered household debt among the unemployed. This is because Germany’s restrictive credit regime makes credit much harder to obtain for households.

The findings in this chapter provide strong evidence that credit functions as a form of social insurance, substituting for social policies and helping households fill gaps between their financial needs and the welfare state’s financial support—but only in cases where households can access credit markets. It is the interplay of the size of the social policy shortfall and the permissiveness of the credit regime that explains variation in debt levels across households as summarized in Figure 4.17. At the macro-level, the structure of the credit regime plays an important role in restricting or permitting households to tap into credit markets. But the micro-level evidence about which households are affected by social policy shortfalls and borrow in response offers a cautionary conclusion: credit is a double-edged sword. It can help households address temporary income shortfalls during unemployment if they have the economic capabilities to manage their debt as the case of higher-income Danish households suggests. But it can also amplify risks and increase the financial burden on households that are already economically disadvantaged, such as lower-income American households. I will revisit the socio-economic and political consequences in greater detail in Chapter 6. But before, I turn to credit as a form of social investment in the next chapter and study the effect of fragmented life-course trajectories on household debt.
Figure 4.17: The Influence of the Social Policy Shortfall and the Credit Regime on Debt Levels Across Household

Note: In Germany, “exposed outsiders” are those who were affected by the Hartz labor market reforms. “Protected insiders” are those who still work in stable jobs unaffected by the Hartz labor market reforms.
Chapter 5
Credit as Social Investment: Borrowing Throughout the Life-Course

The way Denmark organizes its family policies, ranging from childcare to parental leave, has sparked interest from many other OECD countries that are seeking to help their citizens reconcile work and family life. Government support for maternity and paternity leave and publicly-subsidized childcare allow both parents to continue to work while their children are in daycare. About 92% of Danish children age one to two and 97% of children age three to five are in daycare (Kvist 2015). Families pay up to 25% of the cost of daycare; for lower-income families and single parents, the costs are even lower. As a consequence, almost all women return to work after they took time off after childbirth, on average one year. Stay-home mothers are therefore extremely rare (Albæk 2008, ch. 8). These targeted government policies are important pillars that allow Danish parents such as Mette and Christian Miller-Harris to take time off work after childbirth and later to enroll their children in childcare, therefore enabling mothers to participate in the labor market too. The couple, who lives in Copenhagen with their 13-month old daughter, told the Guardian they both have to work for financial reasons but it is the affordable cost of childcare and public leave programs that make their life as a dual-earner couple with a child financially viable.¹

Many governments recognize that childcare is both an educational investment in children and helps parents, especially mothers, to reconcile their careers aspirations with family obligations. Cross-nationally, however, policy responses and financing options differ markedly. “Early childhood education is one of the most important investments a parent can make. [...] But too often, quality child care is out of reach for middle class families,” said Christine Quinn in 2013, who was New York City’s Council speaker and mayoral candidate at that time.

time. But instead of following the Danish approach of publicly-subsidized childcare spots, she introduced the “Middle Class Child Care Loan Initiative,” a subsidized loan program for parents with incomes between $80,000 and $200,000 per year and very good credit scores to cover the costs of daycare and pre-school. But the cost of childcare is only one part of the financial burden many American families face. Unlike in Denmark, where paid sick days and parental leave allow individuals to take time off work for child-related reasons without large income losses, incomplete or non-existing public support and varying degrees of employer-based support increase the financial burden for American families with children. Raquell Heredia, who lived in Fontana, California, had severe morning sickness after she became pregnant. Yet her job as a waitress and bartender did not provide her with sick leave and she decided to quit and began working at a pharmacy. Her new job, however, provided little maternity leave, and when her first child was born she left that job again. “I think that they should make it a lot easier, like for parents to have holidays off with their kids,” she said. Mrs Heredia’s situation is not uncommon for many Americans who would like to take time off work to care for children and either have to take unpaid leave, often risking their jobs because leave is not job-protected, or are unable to do it because of prohibitively-high financial costs.

As I document in Chapter 2, life-course trajectories across OECD countries have become more fragmented as individuals temporarily leave work to raise children, to care for elderly family members, or to get more education and training. These disruptions go hand in hand with earnings losses, foregone incomes, and higher expenditures. More frequent job switches without periods of unemployment but lower earnings can further increase income volatility even for those who remain in full-time employment. Welfare states shape how much in-cash and in-kind support individuals receive during various life-course stages and how much of the costs individuals and their families have to shoulder themselves. While some countries have expanded these social investment policies, others lag behind. In 2007, the OECD issued a report, aptly titled “Modernising Social Policy for the New Life Course,” that urged countries to shift toward social investment policies that would address new working and living realities of households in the knowledge economy (OECD 2007). Denmark and Sweden, two of the countries that turned towards social investment policies early, offer publicly-funded subsidies and transfer payments to ameliorate the financial impact of disrupted life-course choices. These policies concentrate the financial burden of parental leave and childcare

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2 Quoted in “Should Upper Middle Class Tots Get Subsidized Student Loans for Pre-School?” The Observer, May 8, 2013.
costs on the broader shoulders of society. In other countries such as the U.S. or the U.K., social investment policies lag behind. Individuals themselves have to shoulder a larger share of income losses when they take time off work and have to meet (rising) expenditures for education, training, or childcare. Increasingly, they stem these financial gaps by tapping into credit markets and borrowing money.

In this chapter, I study under what circumstances individuals and their families borrow money to address income losses and higher expenses that have to do with deliberate life-course choices, and how this relationship varies across and within countries. I argue that borrowing to bridge these financial gaps is a form of “investment” in assets, human capital, and time, and thus very different from the income-smoothing type of borrowing to address involuntary income losses described in the previous chapter. I focus on the life-course trajectories of individuals in Denmark, the United States, and Germany as they move from education to full-time employment, as they take time off work to raise a family, and as they switch jobs without unemployment spells but fluctuating incomes. The permissive credit regimes of Denmark and the U.S. enable what I call “life-course borrowing” to address income losses and finance higher expenditures, whereas the restrictive credit regime of Germany prevents it.

I begin by documenting the broad links between life-course trajectories and household debt in Denmark, where it is mostly middle- and higher-income households that draw on credit to smooth income losses when they temporarily leave work, for example to care for children or (re-)training. The home equity reform in 1992 had eased access to credit considerably and was heavily used by those outside the labor force as compared to those who remained employed. By contrast, the cost of childcare, which adds a significant financial burden on many households in the U.S. and therefore results in more borrowing to stem those costs, does not lead to higher levels of debt in Denmark because strong government subsidies contain costs for families. But job-to-job switches, a more frequent phenomenon in the flexible Danish labor market, can further amplify income volatility when new jobs do not pay as much as previous jobs. I show that individuals who switch jobs and experience a decline in earnings tap into credit markets to mitigate those losses compared to those individuals who switch jobs but maintain prior earning-levels.

I then move to the U.S., where more individuals borrow money to address the financial consequences of disruptions of their life-course trajectories as well as to cover related expenditures. A large and growing number of employees temporarily leave their jobs for a few weeks scattered throughout the year to care for children, to get training or education,
or because of sickness. This form of leave is often unpaid and rarely supported financially by the welfare state, for example through social policies as is often the case in European welfare states. Family policies such as paid maternity or paternity leave or childcare, lack behind other OECD countries, and in cases where in-cash or in-kind support does exist, it is often unequally distributed or only available through large employers. One similarity to the Danish case is that individuals also borrow money to address financial gaps causes by job-to-job switches that result in declining earnings. In the context of fragmented life-course trajectories and limited support for social policies, the permissive credit market has become a private alternative for many Americans to address volatile incomes or higher expenses.

Lastly, I turn to Germany, where the growing flexibility of the labor market and changing family structures, including the decline of the single breadwinner model and the influx of a growing number of women and young mothers into the labor market, have only recently been met by shifts toward social investment policies. Credit markets, however, are far more restrictive for households than in the Danish and American case. Despite more flexible life-course trajectories, more individuals that temporarily take time off work to care for children, and growing earnings volatility as individuals shift from one job to another, German households rarely go into debt. With one of the highest savings rates, individuals are more likely to tap into savings to smooth income losses and cover related expenditures.

5.1 Denmark

Denmark and other Nordic countries have long been perceived as role-models among OECD countries for their social policies that support households to reconcile work and family life (Bonoli 2013; OECD 2007). The costs of childcare are heavily subsidized by the government and thus rarely pose a significant financial burden. This is in stark contrast to the U.S., as I will document below. It is the growing fragmentation of life-course trajectories themselves that increases incomes volatility. First, taking time off work for various forms of leave or education takes a financial toll. The size of cash transfers and income support from social policies depends on individuals’ incomes and, in the case of maternity and paternity leave, how much employers contribute.\(^4\) Second, frequent of job changes \textit{without} periods of unemployment further increase income volatility as new jobs not necessarily come with higher but lower earnings.

The financial impact of fragmented life-course trajectories differs across households. As

\(^4\)Public-sector employees receive full salary compensation during maternity and paternity leave.
already documented in Chapter 4, the Danish welfare state provides more generous support for lower-income individuals and families than it does for higher-income ones, resulting in higher replacement rates for those in the lower rungs of the income distribution compared to those in the upper rungs. Parental leave payments are, similar to unemployment benefits, tied to prior earnings and capped at a relatively low level. But unlike social insurance transfers, more individuals receive higher parental leave benefits. This includes public-sector employees who are paid their full salary during leave period as well as private-sector employees where collective agreements guarantee higher pay during leave than the public (unemployment insurance) rate. The out-of-pocket costs of childcare also vary by household income. Lower-income parents can get free or heavily subsidized childcare, whereas higher-income parents cover up to one-third of the costs of childcare themselves, regardless of parental employment status. The average cost, however, is one of the lowest in the OECD. Relatively high availability and affordability of care reduce opportunity costs to enroll children in full-time care centers and help families to reconcile work and career aspiration with family life. In sum, Denmark’s permissive credit regime matches the financial needs of individuals and their families in the modern knowledge economy because it allows them to bridge financial gaps and volatile incomes as they move from one life-course stage to another.

5.1.1 Borrowing During Life-Course Stages

How does the debt burden of Danish households change as they move through different phases of life? I use information from the full-population Danish Labor Force Registers to estimate how different life-course stages, such as leaves of absence and educational influence households’ debt-to-income ratios. (For more details on the data see section A.1 in the data appendix.) Figure 5.1 plots changes in this ratio over time for households in different income tertiles. Across all households where a spouse is on leave of absence, including maternity or paternity leave, or in training, higher-income households carry more debt relative to their incomes than middle- and lower-income families. Among households with a spouse on maternity leave, higher-income households consistently had higher debt-to-income ratios than middle- and lower-income households, yet the latter two groups have caught up since the mid-1990s.

To address concerns that other factors such as changing family structures or income dynamics influence the trends in debt leverage displayed in Figure 5.1, I estimate the effect of different life-course stages on household debt across different income quintiles in the following
Figure 5.1: Average Unsecured Debt-to-Income Ratios by Life-Course Stage and Income Group

Notes: This figure shows the household-level debt-to-income ratio for households where a spouse is in one of the life-course stages displayed in the panel. Source: Danish full population administrative register data.

fixed effect regression framework:

\[ Y_{it} = \beta_0 L_{it} + \beta_1^g \sum_{g \neq 1} G_{it} + \beta_2^g \sum_{g \neq 1} (G_{it} \cdot L_{it}) + X'_{it} \gamma + \alpha_i + \delta_t + \sigma_z + \epsilon_{it} \]  

(5.12)

where \(Y_{it}\) is the unsecured household debt (in log) for household head \(i\) in year \(t\). \(L_{it}\) is a dummy variable indicating the respective life-course stage (leave of absence, maternity, training, and student). The control group are household with full-time employed heads. \(G_{it}\) is a dummy variable indicating the households’ income quintile (the bottom quintile is the omitted baseline category). \(X'_{it}\) is a matrix of time- and individual-varying controls including household income, liquid assets, a set of education dummies, age squared, the number of children living at home, and the family type. \(\alpha_i\) is a unit-level fixed effect controlling for time-invariant unobserved heterogeneity across households, thereby identifying changes in debt based on changes in employment status within units. \(\delta_t\) is a year fixed effect to control for aggregate time trends. \(\sigma_z\) is a birth-year fixed effect to control for age and cohort effects. \(\epsilon_{it}\) is the idiosyncratic error term. I estimate a separate regression for each life-course stage.
Figure 5.2 shows the marginal effects being on leave of absence, on maternity leave, in training, and a student on debt by income quintiles, compared to the individual in full-time employment. Households where a spouse is on maternity leave are the ones that carry the most debt compared to other leave of absence and being a student, and borrowing is mostly concentrated among middle-income households, in particular those in the second income quintile. These households carry between 70% and over 100% more unsecured debt than those in the bottom income quintile when a spouse is on maternity leave, compared to those with full-time working spouses. For general leave of absence, higher-income households tend to take out more debt compared to those in the bottom quintile. Much like in the case of unemployment, documented in Chapter 4, the welfare state supports lower-income households to much greater degrees than middle- and higher income ones, reducing the necessity of lower-income households to tap into credit markets.

**Children and Household Debt**

The decline of the single-breadwinner model and the rise of dual-earner families has increased demand for childcare options, either publicly- or privately-funded and organized, since families themselves have a harder time providing and affording care as they seek to reconcile work and family life. In Denmark, single parents on average pay only three percent of their

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### Table A.5.1

<table>
<thead>
<tr>
<th>Income Quintile</th>
<th>Leave of Absence</th>
<th>Maternity Leave</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>-5.3%</td>
<td>112.5%</td>
<td>-42.3%</td>
</tr>
<tr>
<td>Q2</td>
<td>-7.2%</td>
<td>83.8%</td>
<td>-51.9%</td>
</tr>
<tr>
<td>Q3</td>
<td>32.4%</td>
<td>70.1%</td>
<td>-48.8%</td>
</tr>
<tr>
<td>Q4</td>
<td>26%</td>
<td>-2.3%</td>
<td>-2.3%</td>
</tr>
<tr>
<td>Top</td>
<td></td>
<td></td>
<td>1.2%</td>
</tr>
</tbody>
</table>

**Notes:** Each panel comes from a separate fixed effect regression model with unit, year, and birth-year fixed effects based on equation 5.12. The plots show marginal effects of life-course status on unsecured debt by income quintiles. The bottom quintile is the omitted baseline and all effects are relative to the bottom quintile. The numbers show the percentage difference relative to those in the bottom income quintile. Full results in Table A.5.1 in the appendix.

**Source:** Administrative register data.
net disposable income for out-of-pocket costs for childcare, the lowest level in the OECD (see Figure 5.3). Germany with 5.2% still ranks among the most affordable countries in the OECD, whereas the U.S. is the most expensive country for childcare for single parents, who spend on average over half of their net disposable income on childcare. For couples, by contrast, the Danish and the German system become more regressive because both increase the share of parents’ financial childcare contribution based on household income. But with costs at around ten percent of income, both countries are still more affordable than the U.S., where a quarter of couples’ income goes toward childcare. These stark differences in affordability of childcare across the OECD but also within countries (by family type) influence whether families decide to send their children to public or private childcare, the size of the financial burden of childcare, and how likely it is that mothers are taking up full-time work.

Childcare is affordable in Denmark because they are heavily subsidized by the government, with prices set at the municipality level every year. Parents may end up paying up to one-third of the total cost of care, but reduced rates and subsidies are available for families with lower incomes and siblings enrolled in public care (Esping-Andersen et al. 2012; SimonSEN 2010). Moreover, parents have a right to a childcare spot in a childhood education and care center for their children at the age of one year. Denmark is also one of the few countries that provide sufficient childcare services beyond regular school hours (Flynn 2017). The

Figure 5.3: Average Out-of-pocket Childcare Costs as Share of Household Net Income in OECD Countries, 2016

Notes: Single parents with 67% of average earnings and couples with 167% of average earnings.
combination of affordability and comparatively high availability is reflected in high shares of children who are enrolled in full-time care centers as well as high female employment rates, including among young mothers. Almost 77% of all children, irrespective of parental income, up to age three are in childcare (compared to only 20% in Germany) and 87% of them are in care for 30 hours per week or longer (compared to 44% in Germany). Nearly all four-year-olds are in daycare (Kvist 2015, pp. 47-48).

With low and heavily subsidized childcare costs, families in Denmark have no need to go into debt to pay for child-related care. This is in stark contrast to the experience of many young parents in the U.S. as we will see below, who cannot rely on publicly-subsidized low-cost pre-schools and daycare and thus are more likely to borrow money to finance child-related income volatility and expenses.

5.1.2 Easier Access to Credit and Borrowing: The Home Equity Reform of 1992

Danish households rarely face high expenditures for life-course choices such as education or childcare because the government pays the largest part of it. It is the income loss that families experience when they take time off from work for education, training, or family-related leave that leads to borrowing. Since the welfare state provides more support for lower-income individuals and families, debt tends to be concentrated among middle- and higher-income groups.

In this section, I revisit the effect of easier access to credit when Denmark introduced home equity loans for the first time in 1992. In Chapter 4, I demonstrated that the possibility to borrow against the value of their house had a sizable effect among previously savings-constrained individuals. Did easier access to credit also influence individuals who are outside the labor force for reasons other than unemployment or sickness? This category includes individuals who are on leave of absence, including parental leave, in education or training. I estimate a triple-difference-in-differences (DDD) model analogous to the one introduced in equation 4.11 in Chapter 4 but this time I compare savings-constrained households where the head was outside the labor force—but not unemployed—to those where the head remained employed. Since all eligible savings-constrained households are affected by this exogenous ease of credit, using employed individuals as a baseline provides an anchor for the size of the effect. Panel (a) in Figure 5.4 shows the triple DDD results, suggesting that among savings-constrained households with a head who is outside the labor, easier access to credit more

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5 See section 4.4.2 in Chapter 4 for more details on the reform.
Figure 5.4: Marginal Effect of Home Equity Reform on Household Debt Among Savings-Constrained Households, by Employment Status

Notes: Panel (a) shows the marginal effects of the home equity reform in 1992 among savings-constrained households with a head who is employed or outside the labor force based on the triple DDD model in equation 4.11. The error bars are 95% confidence intervals based on robust standard errors clustered at the household level. Panel (b) shows the marginal effects of the home equity reform among savings-constrained households with a head who is employed or outside the labor force based on a version of equation 4.11 where post is replaced by year dummies. All results are relative to the year prior to the reform (the omitted baseline). The error bars are 95% confidence intervals based on robust standard errors clustered at the household level, although not always clearly visible because of the high precision of the administrative records. Source: Administrative register data.

than doubled debt levels after the reform compared to those with a head who is employed. In substantive terms, this effect is twice as large as the effect estimated for unemployed individuals in section 4.4.2 in Chapter 4, suggesting that life-course trajectories have a larger effect on borrowing than unemployment.

Panel (b) shows the results from a fully-flexible and dynamic version of equation 4.11, which interacts the dummies for being outside the labor force and savings-constrained with year dummies instead of pooling the pre- and post-reform periods. In the years leading up to the reform, there is virtually no difference among savings-constrained households with employed heads compared to those where the head is out of the labor force (but not unemployed). After the reform, however, those who are outside the labor force began to borrow more relative to the pre-reform years and relative to employed individuals, suggesting that newly-gained access to credit provided an opportunity for those outside the labor force to address income shortfalls. In sum, these findings suggest that easier access to credit increased
borrowing among households with spouses on leave, education, or training to much higher
degrees than compared to households with unemployed and employed heads.

5.1.3 Job-to-Job Switches and Income Loss

Social insurance and investment policies aim to mitigate the consequences of adverse labor
market risks and to support individuals and their families through various life-course stages.
While the social policy coverage of these risks varies across countries, some types of risks are
not insured at all. Consider the example of income volatility caused by moves from one job to
another when earning in the new job are lower than in the previous one. This form of income
fluctuation has increased in many OECD countries during the last few decades (Schmid
2002). Lower earnings in a new job may be a temporary setback and can be compensated
for with a higher-paying job in the future. While some policymakers such as Presidents
Bush Jr. and Obama have acknowledged that earnings volatility poses a significant financial
problem, they fell short of introducing forms of wage insurance that would address these
issues.\(^6\) In the absence of welfare state support, employees who move into new jobs with
lower pay have to absorb these income losses themselves.

In this section, I show that individuals who are affected by declines in incomes because of
job-to-job switches tap into credit markets and borrow money to bridge these income gaps.
Analogous to the event study framework in Chapter 4 (see section 4.1.1), I compare individ-
uals who switch jobs and lose income to those who switch jobs and retain the same income
level. Based on the Danish register data, I combine information on whether an individual
switches jobs without becoming unemployed in-between with information on whether her
labor income (earnings) changes as a result of the job switch. Earning declines are defined
as drops of more than 5% from one year to the next. Figure 5.5 shows the event study
coefficients relative to the year prior to the job switch. In the years before the job switch
debt levels as expected follow a similar trend among those whose income after the switch
remains the same. Once individuals do switch jobs, debt levels begin to diverge. Those who
experience declines in their income take on about 50% more debt in the year of the job switch
(converted from the logged coefficient), compared to the year before they switch jobs. This
effect persists in the subsequent years. By contrast, those whose income remains the same
do not borrow money. This suggests that credit markets function as a private insurance

\(^6\)In the U.S., wage insurance for workers who lost their job to foreign workers has been introduced under
the Bush Jr. and Obama administrations. See also “How Wage Insurance Could Ease Economic Inequality,”
mechanism, allowing individuals to bridge income gaps when their new job pays less than their old one.

### 5.2 United States

In the U.S., the number of dual-earner, full-time working parents has also increased over the last couple of decades. In the early 1960s, there were only about 25% of married-couple households with children under 18 where both partners were working. In 2012, that number had climbed up to 60%.\(^7\) During the same period, the share of children living with one parent has increased from 9% in 1960 to 26% in 2014.\(^8\) Life-courses have become more fragmented as well as individuals more frequently switch jobs and leave work to care for children or frail elderly relatives and to get more training and education.

What sets the U.S. apart from many European countries is the lack of governmental support for paid leave or child-support policies. Instead, individuals and families rely to

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greater degrees on employers to provide benefits that in other countries would be offered publicly through the welfare state. Yet the public-private welfare state provides less support for families and addresses fewer risks as it once did. As I show in greater detail in Chapter 2, deliberate cuts in social policies and failures to adapt policies to changes in families’ work and life-course realities have further reduced the scope of the American welfare state. The role of employers, an important pillar of the private welfare state, has diminished too (Hacker 2008). At the same time, the American credit regime became more permissive and household-oriented, offering individuals easy access to credit cards, personal loans, and home equity lines of credit. In light of growing financial needs and incomplete and declining government support, households began to tap into credit markets and borrowed money to address the social policy shortfall.

5.2.1 Borrowing During Life-Course Stages

The rise in debt levels of U.S. households has received a lot of attention, but the circumstances that make individuals take on more debt remain less clear. In this section, I demonstrate how fragmented life-course trajectories and the resulting income losses documented in Chapter 2 contribute to growing levels of household debt. As before, I draw on the Survey of Income and Program Participation (SIPP) to track households over time. For more details on the SIPP see section A.1 in the data appendix.

Figure 5.6 begins with descriptive statistics of changes in debt-to-income ratios, that is debt leverage, over time. Panel (a) shows household-level debt leverage for individuals in different types of labor market attachment (the black line) and compares it to the debt leverage of full-time employed individuals (the gray line). This is a useful anchor to gauge the general development of unsecured debt leverage over time. The average debt leverage among all households with a full-time employed head increased only mildly, but those who had were more than one week absent from work without per month for reasons not due to layoff saw the strongest increase in debt leverage from around 40% in the early 2000s to 68% in 2009—even more so than those who were laid off for some weeks or the entire month. Panel (b) splits debt leverage by income tertiles. In virtually all employment scenarios, lower-income individuals carry a higher debt burden relative to their income than higher-income individuals. Debt leverage has on average increased for households across the income distribution but especially strong for middle-income households where the head took unpaid absence from work. This suggests that indebtedness is strongly associated with short-term interruptions of work.
Figure 5.6: Average Unsecured Debt-to-Income Ratios by Type of Labor Market Attachment and Income Group

Notes: The figure shows unsecured debt as a share of disposable income families where the head is in any of the given life-course stages. Panel (a) compares these statuses with households with full-time employed heads (gray lines). Panel (b) splits debt leverage for each life-course stage by income tertiles, which are based on household disposable income. Source: SIPP 1996-2012.

These interruptions are often driven by child-related issues, education and training, or sickness. Limited and incomplete financial support from the welfare state and employers force individuals into unpaid absence and part-time work, thereby increasing social policy shortfalls and financial gaps and push households further into debt. Figure 5.7 shows how debt leverage varies depending on why individuals are absent from work without pay (panel (a)) and work shorter hours (panel (b)). Vacation and personal days, illness, and child-
Figure 5.7: Unsecured Debt-to-Income Ratios of Households in Unpaid Absence and Part-Time Work

(a) Unpaid Absence

Year

(b) Working 35h/week or Less

Year

Notes: The figures show unsecured debt as a share of disposable income for different causes of unpaid absence (panel (a)) and part-time work (panel (b)). Income tertiles are based on household disposable income. Source: SIPP 1996-2012.

related issues are among the primary causes of unpaid absence that have become most strongly associated with higher debt burden over time. Individuals also take vacation and personal days for reasons unrelated to leisure time such care for children or elderly. Recall that the FMLA only grants individuals leave once they have used up their sick leave and vacation time. Debt leverage has also increased strongest among those who work part-time or less because they are temporarily unable or in school. Note that those who are content with their part-time job do not carry more debt than those who are employed or have other reasons for part-time work, shedding doubt on arguments that see the rise in debt driven by conspicuous consumption (cf. Frank 2010).
Unpaid Absence and Indebtedness

If shorter work hours were voluntary choices that reflected individuals’ preferences and content for these working-time arrangements, we should be less concerned about this form of employment. In most cases, however, the reasons for part-time work and above all unpaid absence are child-related issues, illness, and the need to temporarily leave the workforce (Gould and Schieder 2017). To further corroborate the descriptive findings from above, I estimate a range of logistic regression models that allow me to rule out changes in socio-demographic factors such as family structure as factors influencing indebtedness and decisions to leave work. The generic model is as follows:

\[
Pr(Y_{it} = 1) = \logit^{-1}(\beta_0 + \beta_1 S_{it} + X'_{it} \gamma)
\]  

where \(Y_{it}\) is the binary response of whether individual \(i\) carried unsecured debt in year \(t\). \(S_{it}\) is a dummy variable indicating if the respondent was on unpaid absence or, alternatively, a categorical variable of the reason for unpaid absence. \(X'_{it}\) is a matrix of individual-level covariates including income quintiles, liquid savings, education levels, age, number of children, family type, homeowner status, and race. The panels in Figure 5.8 show predicted probabilities for carrying unsecured debt based on different model specifications: the baseline model (panel (a)), a model where the dummy for unpaid absence is interacted with income quintiles (panel (b)), and a model estimating the effect for different reasons for unpaid absence (panel (c)).

Households with a head on unpaid leave have a 32% predicted probability of carrying unsecured debt, almost 5 percentage points higher than those households where the head is full-time employed (see panel (a)). When we allow the effect of unpaid absence on debt to vary by income quintiles, we see that among those who are employed it is middle-income respondents that have the highest probability of carrying debt. But these differences across income groups disappear for those how are absent from work without pay. Still, lower-income respondents who are on unpaid absence compared to being full-time employed see the largest increase in their probability of carrying debt (panel (b)). Finally, panel (c) presents the results from a logistic regression model looking at the specific reasons why individuals temporarily leave work without pay. Illness comes with the highest probability of indebtedness compared to other reasons (35%), but individuals who take unpaid time off work because of pregnancy and childbirth as well as vacation or personal days still have a
Figure 5.8: Predicted Probabilities of Carrying Unsecured Debt during Unpaid Absence

Notes: The figures are based on logistic regression models and show predicted probabilities for carrying debt based on whether the head of the households took unpaid absence. Panel (a) plots the overall effect. Panel (b) split the results by households' net income quintiles. Panel (c) is based on the reasons for unpaid absence. Source: SIPP 1996-2012.

higher probability of carrying debt than those whose unpaid absence is caused by economic factors such as layoff.

Shorter Work Hours and Indebtedness

Shorter and fluctuating work hours add an additional layer of financial insecurity onto the shoulders of Americans (see also Golden 2015, 2016). In this section, I mirror the previous analyses and estimate the effect of shorter work hours and the underlying reasons on the probability of indebtedness through a set of logistic regressions similar to equation 5.13 above.

Panel (a) of Figure 5.9 shows that those who are working shorter hours and part-time work (35 hours per week or less) are more likely to carry unsecured debt than those who are regularly, full-time employed. Panel (b) suggests that the likelihood of having debt because of part-time work across the income distribution is still higher than for those in full-time employment, but unlike in the case of unpaid leave, where all income groups are equally affected, it follows more or less the same income distribution pattern. Even more revealing is panel (c), which shows estimates from the logistic regression model based on the reasons for shorter work hours. Those who work fewer hours because they are temporarily unable to work more, took a vacation or personal day, are in some form of education or training, and care for children are all more likely to carry debt than those who prefer a part-time
5.2.2 Child-Related Income Losses, Expenditures, and Debt

The Family and Medical Leave Act (FMLA) is the only federal policy that grants individuals working for larger companies up to 12 weeks of **unpaid** leave. In 2016, the National Compensation Survey conducted by the Bureau of Labor Statistics found that only 14% of the U.S. civilian workforce had access to paid family leave. This number had only slightly increased from 11% in 2010.\(^9\) For many individuals whose employer does not offer paid leave or who do not live in one of five states that offer disability benefits for a short period after birth, unpaid absence or shorter work hours are often the only options to take time off work.

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to care for children. As we have seen above, many individuals and families go into debt to stem the financial impact of unpaid absence and shorter work hours.

In this section, I take a closer look at the links between childbirth, unpaid leave, and household debt. Do young families who want to spend time with their children after birth but have to do so without pay borrow money to absorb income losses? I shed light on this question by estimating the effect of such unpaid absence after childbirth on unsecured debt in the following fixed effect regression framework:

$$Y_{it} = \beta_1 B_{it} + \beta_2 U_{it} + \beta_3 (B_{it} \cdot U_{it}) + X'_{it} \gamma + \alpha_i + \delta_t + \epsilon_{it} \quad (5.14)$$

where $Y_{it}$ is the unsecured household debt (log) of individual $i$ at time $t$. $B_{it}$ is a dummy variable indicating what I call the “birth period” of 60 days before and after individual $i$ had a child. $U_{it}$ is a dummy variable indicating whether individual $i$ was absent from work without pay. $X'_{it}$ is a matrix of individual-level covariates including household income quintiles, liquid savings (log), highest educational degree (five categories), age and age squared, number of children, a dummy for renter, and three race categories. $\alpha_i$ and $\delta_t$ are unit and year fixed effects. I estimate separate model for single-parent households (male and female head, respectively) and married couples. Table 5.1 the presents results. Female single parents who are on unpaid leave during and after their child is born have almost 1.8 times more debt than those who are not on unpaid leave during and after childbirth. For married couples where the woman takes unpaid leave, the increase in debt is only about 8%. For male single parents, there is no effect.

**Cost of Childcare**

Many parents in the U.S. take a hit in their incomes and forgo earnings when they decide to take time off work to care for children, especially when they receive no or only little financial support from the government and their employer. But this is not the only financial burden young parents with children face. The cost of childcare itself has increased considerably over the past decades. In 2016, the average cost for center-based childcare ranged from $8,572 in Nevada (31% of median state income for single parents and 12% for married couples) to $20,125 in Massachusetts (71% of median state income for single parents and 17% for married couples), where childcare is more expensive than average cost of public college tuition ($12,732). In light of rising costs, families increasingly tap into credit markets to

---

10 On the debate about the exact increase over time see, for example, Herbst (2018) and Laughlin (2013).

Table 5.1: Marginal Effects of Childbirth and Unpaid Absence on Unsecured Debt

<table>
<thead>
<tr>
<th></th>
<th>Unsecured Debt (log)</th>
<th>married couples</th>
</tr>
</thead>
<tbody>
<tr>
<td>male householder</td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>female householder</td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>married couples</td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>Birth period</td>
<td>-1.21**</td>
<td>-1.24***</td>
</tr>
<tr>
<td></td>
<td>(0.59)</td>
<td>(0.44)</td>
</tr>
<tr>
<td>Unpaid absence</td>
<td>0.60**</td>
<td>0.26**</td>
</tr>
<tr>
<td></td>
<td>(0.25)</td>
<td>(0.12)</td>
</tr>
<tr>
<td>Birth period</td>
<td>0.15</td>
<td>2.26***</td>
</tr>
<tr>
<td>\times unpaid absence</td>
<td>(1.35)</td>
<td>(0.80)</td>
</tr>
</tbody>
</table>

| Controls            | ✓                     | ✓               | ✓               |
| Unit FE             | ✓                     | ✓               | ✓               |
| Year FE             | ✓                     | ✓               | ✓               |
| Observations        | 17,621                | 51,802          | 110,971         |
| R²                  | 0.80                  | 0.77            | 0.72            |
| Adjusted R²         | 0.45                  | 0.45            | 0.42            |

*Note*: Results from three separate regression models estimating the marginal effects of paying for childcare on unsecured debt (log); sample split by household type. Birth period is defined as 60 days prior and one year after the birth of the first child. The model in column (3) is estimated for women only. Robust standard errors clustered at the household level. Full results in Table A.5.2 in the Appendix.

*p<0.1; **p<0.05; ***p<0.01.

shoulder the financial burden of childcare. The panels in Figure 5.10 show results based on logistic regression models (cf. equation 5.13), suggesting that households with children that pay for childcare have about a 10 percentage points higher probability of running debt compared to households with children that do not pay for childcare (panel (a)). While the difference in the probability of carrying debt between those who pay for childcare and those who do not is higher for lower-income families, it is middle-income households are overall the most likely to carry debt when they pay for childcare (40% probability, see panel (b)).

The differences across income groups have are in large parts driven by varying opportunity costs of enrolling a child in childcare. Many lower-income individuals cannot afford to enroll their children in kindergarten or daycare and instead rely on informal networks of family, friends, or community organizations. For example, the 2002 National Survey of America's Families found that three to four-year-old children in higher-income families are more likely to be enrolled in childcare centers, whereas children from lower-income families are more likely to be in care by relatives (Minton and Durham 2013). Lower-income individuals face particularly high opportunity costs to enroll their children in kindergarten or daycare and
Figure 5.10: Predicted Probabilities of Carrying Unsecured Debt when Paying for Childcare

Notes: The figure shows predicted probabilities from logistic regression models for having debt when households pay for childcare compared to those who do not. Panel (a) shows the overall effect. Panel (b) split the results by households’ net income quintiles. Source: SIPP 1996-2012.

are rarely considering the option of debt-financed private childcare. Middle-income families, by contrast, are more likely to take on debt to finance private childcare.

Children as Risk-Factor for Bankruptcy

The lack of comprehensive family policies in the U.S., including subsidized childcare, leaves many families on the verge of financial breakdown—and some even fall beyond into bankruptcy (see also Warren and Tyagi 2003). Data from the Survey of Consumer Finances shows that couples and especially singles with children are almost twice as likely to have declared bankruptcy in the past five years compared to childless couples and singles, respectively (see Figure 5.11). When splitting the data by homeownership status, we see that renters are always more likely to have experienced bankruptcy regardless of children in the household, but the difference is most pronounced among couples with children who are almost four percentage points more likely to declare bankruptcy than homeowners.

5.2.3 Job-to-Job Switches and Income Loss

In Denmark, I demonstrated that declining incomes caused by job-to-job switches increase borrowing among affected households. Do we see similar patterns in the U.S.? The SIPP contains detailed information on whether a respondent moved from one job into a different
Figure 5.11: Predicted Probabilities of Bankruptcy by Family Type


Notes: Predicted probabilities of having declared bankruptcy in the last five year from logistic regression models. The models control for age, gender, completed education degree, race, employment status, homeownership (full sample only), income and asset percentiles. Full sample: N=228,935; Homeowner sample: N=161,363; Renter sample: N=67,572. Source: Survey of Consumer Finances (SCF) Combined Data 1989-2016.

Job from one month to another, which allows me to construct a variable of job switch without spells of unemployment. Since liabilities are only reported once every wave instead of every month, I estimate the effect of job switches and income changes on household debt in a difference-in-differences framework as follows:

\[
Y_{it} = \beta_1 P_{it} + \beta_2 L_{it} + \beta_3 (P_{it} \cdot L_{it}) + \mathbf{X}'_{it} \gamma + \alpha_i + \delta_t + \epsilon_{ist}
\]  

(5.15)

where \(Y_{it}\) is the unsecured household debt (log) of individual \(i\) at time \(t\). \(P_{it}\) is a dummy variable indicating the period after the individual switched her job. \(L_{it}\) is a dummy variable indicating whether individual \(i\)'s income declined in the year when she switched jobs. A decline is defined as a five percent decrease in total household income. The comparison group is individuals whose income did not decline despite a job switch (i.e. either remained the same or increased). \(\mathbf{X}'_{it}\) is a matrix of individual-level covariates, including highest educational degree (five categories), number of children, family type (four types), a dummy for renter, three race categories, total pre-treatment household income quintiles, a dummy for savings-constraints defined as liquid savings of less than one month’s of income, or, alternatively, liquid savings as a share of pre-treatment household income. \(\alpha_i\) and \(\delta_t\) are unit and panel fixed effects. The results for different model specifications are in Table 5.2.

The simple bivariate model in column (1) shows a positive DID effect on the interaction
Table 5.2: Marginal Effects of Declining Income After Job-to-Job Switch on Unsecured Debt

<table>
<thead>
<tr>
<th>Dependent variable: Total unsecured debt (log)</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-period</td>
<td>-0.47***</td>
<td>-0.40**</td>
<td>-0.43***</td>
<td>-0.40**</td>
</tr>
<tr>
<td></td>
<td>(0.15)</td>
<td>(0.16)</td>
<td>(0.16)</td>
<td>(0.16)</td>
</tr>
<tr>
<td>Less income (dummy)</td>
<td>-0.17</td>
<td>-0.20</td>
<td>-0.23</td>
<td>-0.20</td>
</tr>
<tr>
<td></td>
<td>(0.24)</td>
<td>(0.25)</td>
<td>(0.25)</td>
<td>(0.25)</td>
</tr>
<tr>
<td>Savings-constrained</td>
<td></td>
<td></td>
<td>-0.12</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.11)</td>
<td></td>
</tr>
<tr>
<td>Savings as share of pre-treatment income</td>
<td></td>
<td></td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Post-period × Less income</td>
<td>0.34*</td>
<td>0.40**</td>
<td>0.45**</td>
<td>0.40**</td>
</tr>
<tr>
<td></td>
<td>(0.18)</td>
<td>(0.18)</td>
<td>(0.18)</td>
<td>(0.18)</td>
</tr>
<tr>
<td>Baseline controls</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Unit FE</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Panel FE</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Observations</td>
<td>16,779</td>
<td>16,752</td>
<td>16,428</td>
<td>16,727</td>
</tr>
<tr>
<td>R²</td>
<td>0.70</td>
<td>0.70</td>
<td>0.70</td>
<td>0.70</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.45</td>
<td>0.46</td>
<td>0.46</td>
<td>0.46</td>
</tr>
</tbody>
</table>

Note: The sample are all households where all members of the household are full-time employed and one switches jobs without a period of unemployment. Post-period is a dummy indicating the period after the job switch. Less income is a dummy indicating that the job switch led to a decline in income. Robust standard errors in parentheses. *p<0.1; **p<0.05; ***p<0.01.

term, suggesting that individuals whose job switch came with a decline in income have around 40% more unsecured debt than those whose income did not decline. Adding the set of pre-treatment covariates increases the DID effect (column (2)). The model in column (3) adds a dummy variable indicating savings-constraints. The effect strengthen furthers, but this model might also introduce post-treatment bias since savings are likely to change if income declines. To lessen these concerns, model (4) scales savings by pre-treatment income. The effect remains substantively the same. These findings show that declining incomes because of job switches have a strong effect on households' debt levels, suggesting that credit markets in both the Danish and the American case allow individuals to smooth these income losses in the absence of social policy support.
5.3 Germany

Long considered the archetype of a Conservative welfare regime and centered on a single-breadwinner model (e.g. Esping-Andersen 1999), life-course trajectories among German households have become more fluid and fragmented in recent decades. This is largely driven by growing female labor force participation, especially since the 1990s, changing family structures and norms, and a more flexible labor market. But compared to other Western-European countries, these changes set in late.

The family-oriented and status-preserving nature of the German welfare state, which promoted employment stability and suppressed women’s entry into the labor market for most of the postwar period, has only recently shifted toward a social investment perspective (Clasen 2005). Maternity leave benefits, for example, have changed most visibly from extremely long but poorly-paid periods of leave, in many cases job-protected, to much shorter but better-paid periods of leave, thus moving closer to the “Nordic” model of parental leave schemes. While the former approach favored single-earner families, the latter opened up opportunities for both partners and especially young mothers to return to work. In 2007, the government introduced a form of parental leave benefits (Elterngeld) that would allow parents to take 12 to 14 months off from work at typically 67% of prior net income (payments range between a minimum of €300 and a maximum of €1,800 per month). The share of full-time women with children between one and two years increased from 32% in 2006 to 43% nearly ten years later. The share of fathers receiving parental leave benefits grew from 21% in 2008 (immediately after introduction) to 34% in 2014. Bergemann and Riphahn (2010) attribute this increase to the availability of parental benefits and find that the share of mothers who intend to return to work after a year of maternity leave increased by 14 percentage points. Demands for more subsidized childcare spots has increased too and gained political momentum in the past couple of years, indicating a more substantive change toward policies helping to reconcile work and family obligations. These policy shifts are also in line with the broader public opinion among a majority of Germans that the government should be the primary funder of paid parental leave and child- and daycare centers (cf. chapter 2).

As life-course trajectories have become more fluid and as new family structures have undermined the traditional single-breadwinner model, households’ financial needs have changed too. Shorter but better-paid maternity leave schemes support families and dual-earner couples and increase women’s probability of returning to work. But they also leave a considerable financial burden on these households during the period of leave. Childcare needs have also
increased as women with children have entered the labor market, increasing the financial costs further. Based on analysis of data from the International Social Survey Programme (ISSP) in 2012, over 50% of German respondents state that children are a financial burden on their parents, compared to 31% of Danes and 26% of Americans.\footnote{ISSP 2012. See Figure 2.10 in Chapter 2.} For many individuals and their families, fragmented and disrupted life-course trajectories caused by time off work for family or educational reasons are now as important a driver of income volatility as disruptions of employment patterns caused by unemployment (see Figure 2.20 in Chapter 2).

While Danish and especially American households increasingly go into debt to address social policy shortfalls and pay for social services as they move through different stages of their lives, German households rarely borrow money for these reasons. This is the result of a restrictive credit regime that tends to channel funds toward the business sector, thereby making access to loans for private individuals much harder. In Denmark and the U.S., households can easily draw on a range of financial products, including credit cards, personal loans, and home equity loans, but in Germany, fewer of these products are available and loan much harder to obtain. Instead, more households draw on savings.

5.3.1 Borrowing During Life-Course Stages

German households carry much lower levels of debt, both in absolute terms and relative to their income, compared to Danish and American households. Moreover, the distribution of debt-to-income ratios across households in different income groups is relatively similar. In this section, I draw on the German Socio-Economic Panel (SOEP), including the supplemental wealth modules which collected information on different types of assets and liabilities in 2002, 2007, and 2012. For more details on the SOEP see section A.1 in the data appendix.

As before, I begin by documenting changes in average unsecured debt-to-income ratios over time for different life-course stages and income groups. Here I use the data from the three years for which data from the wealth modules are available. Figure 5.12 shows the average debt-to-income ratio for households in different income tertiles based on whether the head is in one of the following life-course stages: marginally-employed in a Mini or Midi job, unstable or second job, maternity leave, or education and training. Across all life-course stages, households carry much smaller levels of debt relative to their incomes than in Denmark and the U.S. Between 2002 and 2012, debt leverage remained relatively stable. Differences in debt leverage across income groups are negligible over that period and, in most cases, only about five percentage points. In contrast, more households in Denmark
and the U.S. borrow money in response to financial gaps caused by fragmented life-course trajectories. In Denmark, this is mostly concentrated among middle- and higher-income households that temporarily leave the workforce to care for children. In the U.S, borrowing is much more pervasive as families absorb the financial impact of unpaid leave of absence and shorter work hours.

Average statistics about changes in debt leverage are informative but do not tell us whether individual households tap into credit markets when their life-course trajectories become interrupted. Given the restrictive nature of Germany’s credit regime and its focus on stable employment and income as criteria for prospective borrowers who want to take out loans, I expect that it is much less likely that households borrow to mitigate the financial impact of disrupted life-course trajectories. I capture disruption and fragmentation by creating a measure of how many months per year an individual was in any given employment or life-course status based on the SOEP’s monthly labor force dataset. The main dependent variable is a binary indicator whether a member of the household is currently paying back loans and interest. I chose this measure because amounts of assets and liabilities are not available on an annual basis as they were only collected in the wealth supplement in 2002, 2007, and 2012. I also create an indicator of whether the household has taken on new debt,
which takes the value of one if a household member is repaying debt in year $t$ but did not indicate to be repaying debt in the year before ($t-1$). Both are imperfect measures of indebtedness since they do not capture the true amount. Nonetheless, they allow me to estimate the probability of paying back current or new debt in response to fluctuations in employment status. I estimate a series of conditional logistic regressions that take into account the panel structure of the data and stratify by household. The generic model is as follows:

$$ Pr(Y_{it} = 1) = \logit^{-1}(\beta_0 + \beta_1 E_{it} + X'_{it}\gamma) $$

where $Y_{it}$ is the binary response of whether respondent $i$ in year $t$ is paying back either current or new loans and interest. $E_{it}$ is the number of months the respondent was either full-time employed, part-time employed, on maternity leave, in school or university, or in vocational training. For each status, I estimate a separate regression model. $X'_{it}$ is a matrix of individual-level covariates including household net income (log), monthly savings (log), age, age square, number of children in the household, education dummies (six degree-categories), marital status, homeowner, and a dummy if the respondent resides in East Germany. Similar to a fixed effect regression, the estimated effects in a conditional logistic regression are comparisons within individuals. Figure 5.13 plots the odds ratios for these models.

Figure 5.13: Odds Ratios for Months in Employment Status on Repaying Debt

![Figure 5.13](image)

Notes: Odds ratios with 95% confidence intervals from separately-estimated conditional logistic regression models. The dependent variable is either whether a member of the household currently repays loans and interest or repays new loans and interest. Full results in Table A.5.3 in the Appendix. Source: SOEP.
Among all employment- and life-course stages, only more months in full-time employment is associated with a slightly higher probability of carrying debt, both for total debt and new debt. For respondents on maternity leave or in training, more months in that status is associated with a smaller likelihood of carrying debt, but this finding is not statistically significant. The models estimating the probability of carrying new debt show no effect for maternity leave and an even smaller likelihood for respondents in school, training, or university but again these effects with the exception of vocational training are not statistically significant. In stark contrast to Denmark, where middle- and higher-income households took on more debt for leaves of absence, including maternity and paternity leave, and the U.S., where unpaid absence and shorter work hours are also associated with higher debt levels, German household do not take on debt in any of these circumstances. In the following sections, I show in greater detail that neither child-related absence from work nor income loss because of job-switch increases the likelihood of carrying debt.

5.3.2 Child-Related Costs, Absence from Work, and Household Debt

We saw that in the U.S., unpaid absence for child-related reasons as well as the cost of private childcare both have a strong and sizable effect on households’ debt levels. Do we see similar effects in Germany? Since daycare has become a prominent political topic, even resulting in the legal right to public childcare spots, I first estimate whether the cost of daycare influences households’ indebtedness. The child supplemental data of the SOEP collected information from 2010 through 2013 about whether parents pay for daycare or not, and if so, how much. As before, I use annual information on whether households repay loans and interest to gauge the effect of the financial burden of childcare on indebtedness. I estimate a set of conditional logistic regressions akin to equation 5.16, predicting the probability of repaying loans and repaying new loans based on whether the household pays for daycare. I also estimate the effect of the amount paid for childcare on the probability of repaying loans. To rule out that the effect is only picking up mortgage debt repayments for young families, I split the sample into homeowners and renters and re-estimate the latter model. Figure 5.14 shows the odds ratios for these models.

Panel (a) suggests that those who pay for daycare are about 8% less likely to repay loans than those who are not paying for daycare (34% less likely to repay new loans), but these effects are not statistically significant. Panel (b) shows that regardless of the specification of the dependent variable, higher costs of daycare do not influence the likelihood of repaying
loans. Even when splitting the sample between renters and homeowners, the results remain statistically and substantively insignificant.

The SOEP further collects information whether individuals were absent from work because of a child’s sickness. Since this may result in income losses, I estimate a conditional logistic regression to test whether those who are absent from work for child-related sickness have a higher likelihood of carrying debt. The simple bivariate regression in Column (1) of Table 5.3 shows that there are no substantive and statistical differences between those who were absent compared to those who were not. Adding a set of control variables (Column (2)) and re-estimating the model for repaying new debt only (Column (3)) does not change the substantive results.

In sum, the financial cost of daycare and income volatility caused by child-related absence from work does not make households more likely to be indebted. While in the U.S., children can add significant financial costs to families and make them more likely to go into debt and even file for bankruptcy, there is no evidence of a similar link between child-related costs and debt in Germany with its more restrictive credit regime.
Table 5.3: Odds Ratios of Absence from Work Because of Child’s Sickness on Household Debt

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Debt to pay off (dummy)</th>
<th>All debt</th>
<th>New debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Absent from work because of child’s sickness</td>
<td>0.99</td>
<td>0.92</td>
<td>0.85</td>
</tr>
<tr>
<td>(2)</td>
<td>(1.06)</td>
<td>(1.09)</td>
<td>(1.18)</td>
</tr>
<tr>
<td>Controls</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Observations</td>
<td>59,917</td>
<td>32,893</td>
<td>31,806</td>
</tr>
<tr>
<td>R²</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Max. Possible R²</td>
<td>0.41</td>
<td>0.35</td>
<td>0.14</td>
</tr>
<tr>
<td>Log Likelihood</td>
<td>-15,863</td>
<td>-7,136</td>
<td>-2,344</td>
</tr>
<tr>
<td>Wald Test</td>
<td>0.01</td>
<td>37.93***</td>
<td>40.05***</td>
</tr>
</tbody>
</table>

Note: Odds ratios based on conditional maximum likelihood estimates from conditional logistic regressions with unit strata. Models (1) and (2) use the indicator whether households repay loans and interest, model (3) whether households repay new loans and interest. *p<0.1; **p<0.05; ***p<0.01.

5.3.3 Job-to-Job Switches and Income Loss

Finally, I study whether individuals that move from one job to another and, as a consequence, have a lower income than before go into debt to bridge that income loss. Recall that Danish and American households respond to this type of job switch-induced income loss with more borrowing. To test whether a similar pattern occurs in Germany, I create a dummy variable for switching jobs if the respondent indicated that she took on a new job within the last 30 days. Among those individuals, I only consider those who were continuously in employment to rule out switching to a new job from unemployment or another status outside the labor force. I then define a dummy variable for less income if the respondent’s household income declines by more than five percent. As before, I estimate a conditional logistic regression model, controlling for the same set of covariates as in the previous model (see notes for equation 5.16). Table 5.4 displays the odds ratios of various model specifications.

The bivariate baseline model without controls in column (1) shows that individuals who switch jobs and experience a decline in their income are as likely to carry debt as those whose income does not change or increase. In other words, there is no evidence that these individuals would borrow money to address job-related income losses. Adding baseline socio-demographic controls (column (2)) as well as income and savings (column (3)) leave the interaction effect virtually unchanged. Unlike in Denmark and the U.S., there is no effect of
Table 5.4: Odds Ratios of Job Switches and Declining Income on Household Debt

<table>
<thead>
<tr>
<th></th>
<th>Dependent variable:</th>
<th>Household has debt to pay off</th>
<th>Total debt</th>
<th>New debt</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>Switch job</td>
<td></td>
<td></td>
<td>1.00</td>
<td>0.99</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(1.03)</td>
<td>(1.03)</td>
</tr>
<tr>
<td>Less income</td>
<td></td>
<td></td>
<td>0.97</td>
<td>0.97</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(1.01)</td>
<td>(1.01)</td>
</tr>
<tr>
<td>Switch job x Less income</td>
<td></td>
<td></td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(1.05)</td>
<td>(1.05)</td>
</tr>
<tr>
<td>Baseline controls</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>+ income and savings</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Observations</td>
<td>127,438</td>
<td>121,514</td>
<td>83,249</td>
<td>82,327</td>
</tr>
<tr>
<td>R²</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Max. Possible R²</td>
<td>0.70</td>
<td>0.70</td>
<td>0.61</td>
<td>0.26</td>
</tr>
<tr>
<td>Log Likelihood</td>
<td>-77,005</td>
<td>-73,204</td>
<td>-38,594</td>
<td>-12,469</td>
</tr>
<tr>
<td>Wald Test</td>
<td>6.96*</td>
<td>119.40***</td>
<td>296.88***</td>
<td>141.89***</td>
</tr>
</tbody>
</table>

Note: Odds ratios based on conditional maximum likelihood estimates from conditional logistic regressions with unit strata. Models (1) through (3) use the indicator whether household repay loans and interest, model (4) whether household repay new loans and interest. *p<0.1; **p<0.05; ***p<0.01.

Income loss due to job switch on household debt in Germany, suggesting that credit markets do not serve as alternatives to smooth income losses as individuals move from one job to another.
Chapter 6
The Political and Economic Consequences of Household Debt

During the heyday of Fordist economies, jobs, family structures, and life-course trajectories for most individuals and their families were relatively stable. Disrupted by the structural shifts toward more flexible knowledge economies, however, households now face new socio-economic challenges. Income volatility has increased as unemployment and job switches became more frequent and as individuals more often took time off work to care for children or elderly or enroll in education and re-training programs. Living costs themselves have become more expensive, too, as expenditures for childcare, education, and housing have risen in many countries. But rising costs are not necessarily a financial problem if individuals’ earnings keep up with growing financial needs. In most cases, however, they did not. As those in the top percentiles of the income distribution are reaping most of the economic benefits through rising incomes and returns to investment, those further down the income ladder face stagnating and in some cases even declining wages (Atkinson, Piketty and Saez 2011; Gornick and Jäntti 2013).

Fluctuating incomes and rising expenses increase the financial burden for many households. Yet most of them do not shoulder the financial burden all by themselves. Welfare states and their social insurance and social investment policies are designed to ameliorate the economic and financial consequences of risks and support households financially through different stages of life. In many countries, however, welfare state retrenchment and political failures to adapt social policies to changing realities have left a growing share of society with incomplete support, resulting in social policy shortfalls.

The growth of credit markets during the past decades has opened an important new channel that allows families to opt for private alternatives and borrow money to compensate for shortfalls. Credit markets straddle the worlds of social insurance, which allows individuals
to smooth income gaps during periods of sickness or unemployment, and social investment, which helps individuals to invest in housing, education, or time off work to care for children or elderly family members. For some, credit can enhance social and economic opportunities such as access to education, housing, or to smooth incomes. But not everyone may reap these benefits because access to credit and wealth holdings are distributed more and more unequally. For others, however, credit is less of an opportunity and more of a burden because it can increase families’ economic and financial insecurity.

In this chapter, I study the economic and political consequences of the transformation of credit markets into private alternatives for welfare states for economic insecurity and preferences for social policies, focusing on two separate domains: first, I demonstrate how easier access to credit influences individuals’ economic well-being and subsequently shapes their preferences for social insurance. If credit works as a safety net, we would expect easier access to credit to make individuals feel more secure and, consequently, demand less social insurance. I then focus on the effect of indebtedness on preferences for redistribution and social insurance. There are two mechanisms that influence that link: first, there is a material rivalry between the burden of taxes and the burden of debt and interest repayment. Borrowing money adds additional financial costs onto the shoulders of households, making them less likely to support tax-financed social policies. Second, borrowing money to invest in private social services such as housing, education, or childcare, makes individuals less likely to support the public provision of these services because they want to reap the benefits of their private investment and chose to “opt out” of social policies.

I argue that the relationship between debt leverage and preferences for social policies, driven by the combination of material rivalry and the ability to opt out of social services, depends on the type of debt and on how economically secure individuals feel. Any kind of debt rivals tax payments because of the additional amounts individuals have to devote to repay debt and interest. But when the goal of borrowing is investment (e.g. housing or education) rather than consumption (e.g. smooth temporary income losses), individuals’ expectation of higher future payoffs further influences their ability to opt out of social services, resulting in lower support for welfare policies. Economic insecurity then shapes the extent to which the cost of credit outweighs the tax burden, and whether the gains from being able to opt out of social services are larger than the expected benefits and returns from public social services.

For individuals who feel economically secure, growing debt leverage makes them less likely to support social policies because of material rivalry and, in the case of investment borrowing, the ability to opt out of social policies. Yet for individuals who feel economic
insecure, an increase in debt leverage makes them more likely to demand support from the
government only in the case of consumption borrowing because there are no future payoffs
and the benefits from public social insurance outweigh the financial burden of debt.

Empirically, this chapter uses data from an original cross-national survey that was de-
dsigned together with Jacob Gerner Hariri, Amalie Sophie Jensen, and David Dreyer Lassen.¹
We fielded the survey in nine OECD countries—Canada, Denmark, England, France, Ger-
many, the Netherlands, Spain, Sweden, and the U.S.—in April and May 2017, with about
2,000 completed interviews in each country except the U.S., where we collected a larger sam-
ple of 5,000 completed interviews. Respondents were contacted through the survey company
Epinion. The average response rate across all nine countries was 66%.² In the following, I use
data for respondents between the ages of 15 and 64 to capture the working-age population
and exclude those who are self-employed to exclude loans used for business purposes.

6.1 Household Debt and Economic Insecurity

Households' economic and financial insecurity, particularly the risks of income loss and its
financial consequences as individuals move through life, have grown considerably in many
OECD countries over the last decades and became a concern for households and policymakers
alike.³ Economic insecurity is driven a range of factors, including job loss, earnings and
income volatility, sudden higher expenditures, rising cost of living combined with stagnating
wages, illness, family formation such as the birth of a child or divorce, and the decline of
welfare benefits. For many households, their cushion of financial wealth is shrinking while
the burden of secured debt such as mortgages and unsecured debt such as credit card debt,
personal loans, or student debt, is growing (Porter 2012). Yet not all households are equally
exposed to these risk factors. Moreover, macro-level institutions such as comprehensive
public insurance systems for unemployment or health care mitigate declines in income when
people lose their jobs and contain out-of-pocket costs when individuals become sick.

In this section, I document how individual-level economic insecurity varies across coun-
tries and to what extent household debt levels shape subjective perceptions of economic
insecurity using the aforementioned cross-national study. Economic insecurity can be mea-

¹The survey was generously funded by David Dreyer Lassen's European Research Council Grant
No. 313673.
²For detailed country-level information about exact numbers of completed interviews and response rates
see Table A.6.1 in the appendix.
³On economic insecurity see, among others, Armingeon and Bonoli (2006); Boarini and Osberg (2014);
Hacker (2007, 2008); Morduch and Schneider (2017); Western et al. (2012).
sured objectively by focusing on factors such as income losses, health insurance coverage, or amounts of financial wealth (e.g., Hacker, Rehm and Schlesinger 2013) or subjectively by asking respondents directly about their own subjective sense of security. Hacker et al. (2014), for example, have developed the Economic Security Index, which captures insecurity among Americans as a function of large losses in household income, large spikes in household medical spending, and the adequacy of household financial wealth as a buffer to mitigate these shocks.

I use a set of five survey items that asks respondents how worried they are about their job situation, maintaining their current income, their health insurance coverage, having enough money to retire on, and getting out of debt. I combine these five survey items into an economic insecurity index using principal component analysis. The resulting scores are standardized to range between negative one and one, with higher values indicating more insecurity. Figure 6.1 shows the distribution of this index in Denmark, the U.S., and Germany. Respondents in the U.S. on average feel the most insecure (median of 0.04), followed by those from Germany (-0.22) and Denmark (-0.44). The distribution is heavily left-skewed in Denmark, suggesting that many more Danish respondents feel economically secure. In the U.S., the distribution between those who feel very insecure and those who feel very secure is almost equal, suggesting that more individuals feel insecure than in both Denmark and Germany.

Increasingly, household debt has been recognized as another source of economic and financial insecurity. Depending on the size of the interest rate and the outstanding debt balance, households devote a considerable share of their disable income to debt service.

Figure 6.1: Distribution of the Economic Insecurity Index

Notes: The economic insecurity ranges from minus one to plus one. Higher values indicate more insecurity. The gray dashed line indicates the country mean.

4Table A.6.3 in the Appendix shows the factor loadings of each survey item.
Lower-income households face particularly high costs since they are typically charged higher interest rates than higher-income households and, for a given level of debt, have to devote a larger share of their disposable income to servicing that debt. Moreover, indebted households are also at higher risk of falling into arrears or even bankruptcy when their incomes are fluctuating or suddenly drop, for example because of unemployment or sickness.

A higher debt leverage, however, does not necessarily lead to higher levels of insecurity. Households with matching amounts of savings can borrow money and still meet monthly repayment schedules even if they experience income losses. When employment is secure, larger debt repayments are also more manageable since individuals can count on regular incomes to pay back these loans. Some types of debt, combined with the purpose of borrowing in the first place, are more likely to cause economic and financial trouble than others. Payday loans or credit card debt carries much higher interest rates than other types of debt. Moreover, some households tend to be in worse financial circumstances when they take out these loans to smooth income losses or cover financial emergencies. Yet other types of debt such as mortgages or student loans can be considered a form of investment in financial or human capital and are more likely to yield payoffs in the future. But even these types of debt do not shield individuals from falling off the financial cliff. Job losses, volatile incomes, or stagnating wages can turn most types of debt into sources of financial insecurity. At the macro level, a range of institutions prevents higher levels of debt from turning into sources of risk. Strong employment protection that guarantees stable income and comprehensive social policies that provide income support in the case of unemployment or sickness are examples of policies that ensure households are able to make regular payments on loans and interest rates.

I begin by studying the how different types of debt influence households’ subjective economic security across different countries. I focus on three categories of debt: mortgage debt and student loans, representing forms of investment into financial and human assets, and unsecured debt, which includes credit card debt, personal loans, and debt to family and friends. Unfortunately, the data does not allow me to distinguish the specific reasons for why individuals borrow in the first place. Since assets are an important buffer influencing economic security, I scale mortgage debt by total assets, including the value of checking and savings accounts, bonds and other securities, and total housing wealth. I scale student loans and unsecured debt by households’ liquid assets, that is total assets without housing wealth. Respondents are then grouped into four categories based on their debt leverage: those carrying no debt in that category, those with less than half of their assets worth in
debt, those with debt between half and up to the equivalent of their assets, and those who carry more debt than assets.

Figure 6.2 compares average levels of subjective economic insecurity among households with different levels of debt relative to assets across Denmark, the U.S., and Germany. American respondents on average feel more insecure than German and Danish respondents.

Figure 6.2: Average Levels of Economic Insecurity by Different Types of Debt-to-Asset Ratios

![Graph showing average levels of economic insecurity by different types of debt-to-asset ratios for Denmark, Germany, and the United States.](image)

Notes: Mortgage debt is scaled by total assets, including the value of checking and savings accounts, bonds and other securities, and total housing wealth, and is based on homeowners only. Student loans and unsecured debt are scaled by liquid assets, that is total assets without housing wealth. Unsecured debt includes credit card debt, personal loans, and debt to family and friends. The economic security index ranges from -1 to 1, higher values indicating more insecurity.

Increases in mortgage debt leverage, the largest single debt item in all countries, is associated with higher levels of insecurity in the U.S. and Germany but not in Denmark, where higher mortgage debt leverage leaves economic insecurity virtually unchanged. This is a noteworthy finding since Denmark has one the highest total debt burden among OECD countries, more than the U.S. These differences are in part driven by unique features of the Danish mortgage system, which issues covered bonds to the same amount of the value of the mortgage (see Section 3.3.1 in Chapter 3 for more details), and in part by the universal welfare state that provides a more comprehensive social safety net than the American welfare state does. Higher levels of student loans relative to liquid assets, by contrast, are associated with higher levels of insecurity in all countries. In Germany and Denmark, most public tertiary education is essentially free, and student loans typically cover living expenses. In the U.S., by contrast, student loans can cover room and board as well as tuition fees. Unsecured debt follows a similar pattern. American respondents with unsecured debt report higher levels of
insecurity that grows at a faster rate as debt leverage increases compared to German and Danish respondents.

6.2 Access to Credit, Exposure to Risk, and Policy Preferences

The influence of financial markets stretches into the daily lives of many individuals, ranging from the palette of financial products for savings such as 401(k)s and other defined-contribution pension plans to mortgage loans, student loans, and the widespread use of credit cards.\footnote{See Davis and Kim (2015); Fligstein and Goldstein (2015); Langley (2008).} In earlier chapters of this dissertation, I documented that individuals and their families increasingly rely on credit markets as private alternatives to the welfare state and borrow money to smooth income losses and invest in financial assets such as housing and human capital through education or childcare. What is less well known, however, is how credit markets and growing access to various types of loans influence individuals’ preferences for social policies.

6.2.1 Theoretical Expectations

In this section, I propose a theoretical framework that links access to credit to changes in preferences for social insurance. I draw on work that links economic circumstances and ideological predisposition to support for social policies and argue that when individuals can borrow money more easily, they positively re-evaluate their wealth position and their ability to deal with risks and, accordingly, update their preferences for social insurance.

*Economic Circumstances*

Prior work on the micro-foundations of social policy preferences falls broadly into two camps. One set of arguments identifies individuals’ *economic position* as a key driver of preferences for social policies. The canonical Meltzer-Richard model hypothesizes that the median voter will push for more redistributive spending up to the point where the efficiency costs of distortionary taxes outweigh the flat-rate benefits of redistributive spending (Meltzer and Richard 1981; Romer 1975). Assuming that the decisive median voter is a utility maximizer and has an income below the national average, this voter prefers social redistribution from the rich to the poor through proportional taxation. When the average income increases...
relative to the income of the median voter, the amount of redistribution preferred by the median voter will increase too. Individuals’ relative position in the income distribution should therefore determine their preferences for redistribution, with higher incomes leading to less support for redistribution.

This model, however, has been criticized for its underlying assumptions about rational and knowledgeable individuals and its predictions are typically not borne out empirically (see, for example Moffitt, Ribar and Wilhelm (1998)). For one, voters typically do not know their own place in the income distribution (Cruces, Perez-Truglia and Tetaz 2013; Norton and Ariely 2011) and rarely engage in demanding cost-benefit analyses.

In recent decades, more fine-grained approaches have gained prominence and moved beyond the Meltzer-Richard model in various important ways. First, social policies are not only about redistribution but also about social protection and insurance. Individuals’ exposure to various kinds of risks is therefore an important driver of individuals’ preferences for social policies. Cusack, Iversen and Soskice (2007) argue that economic risk exposure that is relevant for individuals’ income and employment status is related to preferences for redistribution, demonstrating that unemployment risk, either real or perceived, strongly increases support for redistribution. Moving beyond labor market risks, Hacker, Rehm and Schlesinger (2013) argue that economic insecurity systematically and substantially affects individuals’ attitudes toward social policies. They find that preferences are strongly shaped by economic shocks related to employment and health care, in particular those that are temporally proximate. Their conceptualization of economic risk draws on a broad set of domains, namely employment, family risk, wealth arrangements, and medical care.

Other work focuses on skills and their degree of specificity as another factor shaping preferences for social policies. Iversen and Soskice (2001) argue in their “asset theory of social preference formation” that individuals who invest in highly specific skills, that is skills that are industry-specific and cannot easily be transferred to other sectors, potentially face longer periods of unemployment and thus a more significant decline in income if they lose their job. Consequently, these individuals strongly support social policies that insure them against risks associated with skill specificity (see also Estevez-Abe, Iversen and Soskice 2001; Mares 2003). Rehm (2009) extends this logic and shows that not only industry-specific risk but also occupational risk determines redistributive preferences. The insurance motive can be independent of income if the risks at stake are difficult to insure privately (Moene and Wallerstein 2001). Moreover, even well-off individuals are willing to support redistribution
from rich to poor if they expect their income to drop or their skill-specific risk to increase in the future.

A final set of arguments shifts attention to individuals’ relative position in a country’s income distribution and their general sense of social upward mobility. Piketty (1995) develops a rational-learning theory of redistributive politics in which support for redistribution is determined by changes in beliefs about the relative influence of effort or luck on one’s position in the income distribution. Benabou and Ok (2001) draw on this theory and develop a model in which the prospect of (social) upward mobility shapes preferences for redistribution. They show that in an environment in which redistributive policies cannot be changed frequently, a sizable portion of individuals with incomes below the median will oppose these social policies because they expect to move up the income ladder in the near future and thus would not benefit from them. More recently, Alesina and La Ferrara (2005) estimate the impact of the socioeconomic background and subjective perceptions of future mobility of individuals on preferences for redistribution. Drawing on panel data they find that higher expected future income significantly decreases support for public redistribution.

_Ideological Predisposition_

A second set of arguments to explain social policy preferences highlights individuals’ ideological predispositions. Partisan ideology and partisan identification (PID) has a long tradition of explaining policy preferences in general and attitudes toward social spending in particular. PID is conceptualized either as psychological attachment (Campbell et al. 1960) or social identity (Green, Palmquist and Schickler 2002). Other scholars argue that PID serves as informational shortcut (Downs 1957) and as “running tally” about which party serves individuals’ self-interests best (Achen 1992). For most of the 20th century, support for the welfare state appeared to be much stronger among voter of the left than those of the right (Shaw and Shapiro 2002).

Moving beyond political ideology, other work examines the role of values and beliefs about the extent to which individuals have control over their income prospects, the prevalence of economic opportunities, and the direct or proximate causes of poverty and wealth (see, for example Alesina and Glaeser 2004; Bean and Papadakis 1998; Bowles and Gintis 2000; Gilens 1999). Fong (2001) empirically tests the relative influence of whether individuals believe that their place in the income distribution is largely self-determined or largely out

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6Note that this conceptualization of PID is most likely to hold in the U.S. context of two parties, whereas multiparty systems and coalitional government tend to complicate partisan alignment yielding ambiguous predictions for PID in these settings.
of their own hands on reported preferences for redistributive policies. In contrast to work focusing exclusively on economic self-interest, she finds only weak support for the self-interest channel but strong support for behavior and attitudes driven by reciprocity and desire for equity. Alesina and Angeletos (2005) formally model the role of fairness influencing preference formation with respect to public redistribution. Testing their model, they find that in an economy in which individuals believe that effort determines one’s position in the income distribution and equality of opportunity guarantees equal chances of reaping the benefits of one’s work, redistribution and the level of taxation will be low compared to societies which believe that luck, birth, or connections determine income.

Bénabou and Tirole (2006) adopt a comparative perspective and show that individuals across countries differ in their views on the causes of poverty and wealth. They draw on psychological evidence suggesting that most individuals are driven by a strong need to believe in a just world “in the sense that people generally get what they deserve, and deserve what they get” (Bénabou and Tirole 2006, p. 700). Aggregating across individuals they find that individuals’ attitudes differ across countries depending on these collectively held beliefs and ideologies. This gives rise to two different equilibria, an “American” with a high prevalence of just-world beliefs and a comparatively laissez-faire and weakly redistributive public policy, and a “European” with more pessimism and a more extensive welfare state. Alesina, Cozzi and Mantovan (2012) reach similar conclusions and find that the conception of fairness largely determines attitudes for redistribution.

**Linking Access to Credit to Economic Security and Social Policy Preferences**

Economic circumstances, most importantly income, financial wealth, and exposure to risks, wield significant influence over individuals’ social policy preferences. I argue that access to credit mediates this link because credit operates as a private alternative to social insurance. Knowing they can borrow money to address income shortfalls, individuals then update their preferences for social insurance and demand less support from the government. This works through two mechanisms, both of which are not mutually exclusive. First, access to credit directly influences individuals’ perceived ability to deal with future risks. In times of economic hardship, for example when individuals lose their job or face sudden medical expenses, easy access to credit allows them to borrow money to smooth income losses or meet higher expenditures. This increases individuals’ perceived economic security because individuals know they can draw on credit lines to address the financial consequences of income fluctuations. If preferences for social policies are shaped by economic risk and income
security, access to credit can mitigate this risk through the possibility of smoothing income and buffering shocks.

Second, access to credit indirectly influences individuals’ overall economic circumstances as it allows them to address income losses and higher expenditures now, spending beyond their current financial means, while deferring costs into the future. As a consequence, individuals may perceive themselves as wealthier, even if their actual income and wealth remain unchanged. Ansell (2014), for example, argues that homeowners are privately insured against unemployment or income loss through their housing assets, which owners conceived of as “nest-eggs.” Once asset prices and thus the value of their house increase, homeowners’ support for social insurance declines because the value of their private nest-egg has increased. Access to credit can invoke a similarly inflated sense of wealth, leading individuals to believe that they no longer need social insurance because their position in the income and wealth distribution has changed.

Both mechanisms draw on a process of cognitive updating in which access to credit influences individuals’ perceived economic self-interest and ability to address future risks, their position in the income distribution, or both. Individuals incorporate new information into their considerations through a learning process that follows a form of Bayesian updating and form new preferences accordingly. The assimilation of new information then leads to a new calculus about their economic position, their exposure to risk, and their ability to address it (see Gerber and Green 1999; Page and Shapiro 1992). Margalit (2013) uses this updating logic to argue that during the economic recession of 2007-09 individuals who experienced significant changes in their own economic circumstances began to strongly support welfare policies. At the same time, the preferences of individuals who held opposing political views prior to the recession converged once these individuals were hit by economic shocks.

I therefore expect that easier access to credit dampens individuals’ demand for social insurance, either because access to credit increases their perceived ability to deal with risks, because it inflates their sense of wealth and security, or through a combination of both. I do not attempt to disentangle the precise mechanisms in this chapter and focus on the link between ease of borrowing and preferences for social policies. I first show that easier access to credit dampens respondents’ subjective economic insecurity. I then provide evidence that easier access also lowers demand for social insurance even in the case of higher future risks.
6.2.2 Access to Credit Increases Subjective Economic Security

The growing influence of financial markets across the OECD world made credit for many households more easily obtainable. In this section, I demonstrate that easier access to credit positively influences individuals' subjective sense of economic security.

The degree of access to credit is measured by how easy it would be for respondents to borrow money from a financial institution if they were to experience financial hardship (five-point answer scale, ranging from very difficult to very easy). I convert the continuous measure of ease of borrowing into a dummy variable that takes the value of one if the respondent indicates that she finds it "very easy" to borrow in the case of a financial emergency and zero if she finds it "very hard." Respondents that do enjoy easy access to credit may be fundamentally different from those that find it hard to borrow money. On average, they have higher incomes and more liquid assets, are homeowners, and older (see the balance plot in Figure A.6.1 in the Appendix.) I use entropy balance to adjust for those imbalances between the two groups (Hainmueller 2012). This method chooses weights that directly optimize covariate balance rather than finding matching control units. I balance on the following covariates: age, income, gender, family type (four categories), number of children living in the household, education (seven degree-categories), willingness to take risks (ten-point index), and homeowner. I then estimate the following regression model on the balanced dataset:

\[ Y_{ic} = \beta_0 C_{ic} + X'_{ic} \gamma + \alpha_c + \epsilon_{ic} \]  

(6.17)

where \(Y_{ic}\) is respondent \(i\)'s subjective economic insecurity index, ranging from -1 to 1. Higher values indicate more insecurity. \(C_{ic}\) is a dummy variable indicating whether the respondent has easy access to credit or not. \(X'_{ic}\) is a matrix of individual-varying controls including age, a dummy for male, highest education degree (eight degree-level categories), family status (categories for single or couple households, with and without children), number of children at home, net disposable income (log), a dummy for savings constraint measured as households' with less than one months of income worth in liquid savings, a dummy for homeowners, and an indicator of respondent's willingness to take risks (ten-point scale). The link between easier access to credit and economic insecurity may simply be driven by changes in individuals' willingness to take risks. Fligstein and Goldstein (2015), for example, argue that the rise of financial products has deepened individuals' involvement in financial

\[7\] The exact question wording is: "If your household were to experience (a period of) financial hardship tomorrow, how easy would it be for you to borrow money from a financial institution." The five-point answer categories range from very easy to very difficult.
markets and made Americans more willing to take and accept risk. To rule out that these changes in "risk culture" are driving the link between easier access to credit and economic insecurity, I also control for respondents' willingness to take risks. $\alpha_c$ is a country-level fixed effect controlling for fixed differences across countries. $\epsilon_{ic}$ is the idiosyncratic error term. Figure 6.3 shows the marginal effects for different model specifications.\(^8\)

Figure 6.3: Effect of Easy Access to Credit on Subjective Economic Insecurity

![Figure 6.3: Effect of Easy Access to Credit on Subjective Economic Insecurity](image)

*Notes:* Marginal effects from country-fixed effects regression models. All coefficients are relative to respondents with very difficult access to credit. The dependent variable, economic insecurity, ranges from -1 to 1. Higher values indicate more insecurity. Full regression results appear in Table A.6.6 in the appendix.

The findings suggest that respondents with easy access to credit are more economically secure than those who find it very difficult to borrow money. In the baseline model with country-fixed effects but without controls, those who can easily borrow are about one standard deviation (0.63 on the insecurity index) more secure than those who cannot. Adding a set of baseline demographics and income variables and adding a measure of respondent's willingness to take risks, respectively, lowers the coefficients slightly but leave the substantive findings unchanged. Even though entropy balance ensures that respondents with easy access to credit are comparable to those without easy access to credit based on the selected set of covariates, the findings may not be strictly causal. Yet the evidence supports the argument that easier access to credit increases respondent's subjective sense of economic security. In the next section, I demonstrate that individuals who do enjoy easy access to credit hardly change their demands for social insurance in light of higher future risks, whereas those that

\(^8\)Full regression results appear in Table A.6.6 in the appendix.
find it very difficult to borrow money demand more support from the government when future risks are high. This suggests that respondents indeed perceive credit as an alternative to welfare state’s functions.

6.2.3 Access to Credit as Private Alternative to Social Policies

What are the consequences of credit as a private alternative to publicly-provided social insurance on individuals’ demand for these policies? As easier access to credit increases individuals’ perception of economic security, we would expect that it also changes individuals’ demand for social insurance. Higher expected economic risks, for example unemployment, may not translate into more demand for unemployment insurance if individuals can easily tap into credit markets to smooth such income losses.

I use three survey items that allow me to estimate the interaction between of credit access and unemployment risk on preferences for social insurance. I measure respondents’ support for social insurance through the question of whether the government should do more to help the unemployed (five-point answer scale from strongly disagree to strongly agree). I measure access to credit using the same binary indicator for ease of borrowing as in the previous model. Finally, we ask individuals to assess the probability of becoming unemployed in the next years on a zero to 100 probability scale. As before, I use entropy balance to adjust for imbalances between respondents who have easy access to credit and those who do not. I then estimate the following regression model, testing how easy access to credit influences respondents’ support for social insurance policies as they face higher subjective risks of unemployment in the future:

$$Y_{ic} = \beta_0 R_{ic} + \beta_1 C_{ic} + \beta_2 (R_{ic} \cdot C_{ic}) + X'_{ic} \gamma + \alpha_c + \epsilon_{ic}$$  \hspace{1cm} (6.18)

where $Y_{ic}$ is the survey response of individual $i$ in country $c$ for her support for social insurance, coded as a five-point numeric scale, where higher values indicate more agreement. $R_{ic}$ is the respondent’s probability of becoming unemployed in the following year (on a 0-100 point risk scale). $C_{ic}$ is a dummy variable indicating if individual $i$ has easy access to credit or not. $X'_{ic}$ is a matrix of the same individual-varying controls as in the previous model based on equation 6.17. $\alpha_c$ are country-level fixed effects controlling for fixed differences across countries. $\epsilon_{ic}$ is the idiosyncratic error term. Figure 6.4 shows predicted values from this fixed effect regression model.

For full question texts see table A.6.2 in the appendix.
Figure 6.4: Predicted Levels of Support for Government Help for Unemployed Individuals by Risk of Job Loss and Ease of Borrowing

Notes: Marginal effects plot based on a country-fixed effect model with entropy-balanced data. Full results appear in Table A.6.7 in the appendix. This plot is based on the model in column (3).

Among individuals with easy access to credit, a higher risk of unemployment is only weakly associated with more demand for social insurance, suggesting that the availability of credit as a private alternative to social services suppresses demand for more public provision of these services. Yet among respondents who have a hard time accessing credit markets to borrow money, a higher risk of unemployment is associated with a much stronger demand for social insurance precisely because these individuals cannot rely on credit as a private alternative. The results remain similar if we use individuals’ subjective economic insecurity index and if we compare unemployed and employed individuals, as shown in columns (1) and (2) of Table 6.1, respectively. These findings suggest that in light of future economic risks or actual unemployment, easier access to credit has a dampening effect on demand for social services.

To further check whether this effect is specific to the domain of social insurance, I re-estimate the regression model from equation 6.18 for respondents’ preferences for redistribution, using the same entropy-balanced dataset. The question asks if the government should do more to reduce income differences. The results in the first two columns of Table 6.2 compare the effect of easy access to credit on preferences for redistribution as a function of unemployment risk to the results from the previous model for preferences for unemployment insurance (replicated in column (3)). The results indicate that easier access to credit has no
Table 6.1: Effect of Easier Access to Credit on Preferences for Social Insurance By Economic Insecurity Index and Unemployment

<table>
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<td>Gvt. should do more to help the unemployed</td>
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<td>(2)</td>
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<td>Ease of access to credit</td>
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<td>-0.07***</td>
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</tr>
<tr>
<td>Economic insecurity index</td>
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<td>Unemployed</td>
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</tr>
<tr>
<td>Easy access to credit × Economic insecurity index</td>
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<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>11,061</td>
<td>7,998</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.07</td>
<td>0.07</td>
<td></td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.07</td>
<td>0.06</td>
<td></td>
</tr>
</tbody>
</table>

Note: Marginal effects from country fixed effect regression models (nine countries). The DV ranges from -2 to 2 on a five-point scale. *p<0.1; **p<0.05; ***p<0.01.

sizable nor statistical effect on preferences for redistribution.

In sum, the findings in this section demonstrate that households that can easily borrow money feel more secure economically and are much less likely to demand more public social insurance even if they face higher future risks compared to households that have more difficulty accessing credit markets. In the following section, I turn to debt levels and study how growing debt leverage itself influences individuals’ preferences for social policies.

### 6.3 Household Debt and Growing Divisions of Social Solidarity

The previous section demonstrated that access to credit influences the relationship between individuals’ exposure to risks and their preferences for social policies. Credit functions like a private alternative to essential insurance functions of the welfare state, thus dampening demand for social insurance among those who can easily tap into credit markets to bor-
Table 6.2: Effect of Easier Access to Credit on Preferences for Redistribution by Subjective Risk of Unemployment

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Redistribution</th>
<th>UI insurance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>Probability of unemployment next year</td>
<td>0.14 (0.09)</td>
<td>0.16* (0.09)</td>
</tr>
<tr>
<td>Easy access to credit (dummy)</td>
<td>-0.46*** (0.07)</td>
<td>-0.44*** (0.07)</td>
</tr>
<tr>
<td>Probability of unemployment x Easy access to credit</td>
<td>0.24 (0.16)</td>
<td>0.14 (0.16)</td>
</tr>
</tbody>
</table>

Controls | ✗ | ✓ | ✓ |
Country FE | ✓ | ✓ | ✓ |
Observations | 2,277 | 2,277 | 2,277 |
R² | 0.12 | 0.16 | 0.13 |
Adjusted R² | 0.11 | 0.15 | 0.12 |

Note: Marginal effects from country fixed effect regression models (nine countries). The dataset is balanced using entropy balance. Using the continuous variable of ease of credit access without entropy balance yields similar results.
*p<0.1; **p<0.05; ***p<0.01.

In this section, I turn to individuals once they took on debt and study the downstream consequences of various forms of indebtedness on preferences for social policies.

6.3.1 Theoretical Expectations

Why would we expect the amount of debt a person carries to influence her preferences for social policies? I argue that two mechanisms shape the links between indebtedness and the social policy preferences space: material interests and the rivalry between tax and debt payments as well as the ability to opt out of public social services and "invest" in private options using credit.

Material Rivalry and the Politics of Opting Out

First, debt and interest payments compete with tax payments and impose an additional financial burden above and beyond individuals’ tax payments and social insurance contributions. Since higher-income individuals already pay more taxes into the system, they are less likely to see their taxes to go to public services when they pay for some of them privately through credit. Lower-income individuals, however, may also perceive their debt burden as a rival to tax payments, because they devote an even larger share of their incomes to debt...
and interest payment. Moreover, monthly debt and interest payments are also highly visible to individuals, reminding them of the financial burden associated with their loans. Indebted individuals may therefore prefer less spending on social policies since they already borrowed money to obtain social services and do not want to pay twice.

Second, credit allows individuals to “opt out” of publicly-provided social services. Those who borrow money to get a mortgage, to finance educational programs or university degrees, or to pay for private childcare, have invested in private services to financial assets or human capital and thus opted out of the public provision of such goods and services. I expect that these individuals have fewer incentives to support tax-financed social policies and services if this would mainly benefit those who remain within the public system and benefit from it. In addition to the material rivalry between debt, interest, and tax payments, indebted individuals prefer less spending on social insurance and redistributive policies because it would undermine future payoffs and returns on their private investment. This form of opting out is most visible in education spending where parents face the choice between public and private options (Ansell 2010; Busemeyer and Iversen 2014). A similar logic applies to homeownership as a form of self-insurance. If the value of the house increases, homeowners become more conservative and less likely to support public unemployment insurance (Ansell 2014). By tapping into credit markets to privately finance goods and services that alternatively could be offered publicly, including housing, education, childcare, or time off work, individuals essentially opt out of public services and instead rely on borrowed money that they have to repay.

Individuals with large amounts of mortgage debt, student loans, or debts to pay for childcare, not only face tax burden and debt and interest repayments but also perceive these loans as a form of investment with sunk costs whose benefits they want to reap. As a consequence, I expect that indebted individuals are less likely to support tax-funded policies that provide similar services to the general public because they want to make sure that they protect the future rewards of their investment and do not want their tax money go toward services they already paid for privately.

In sum, if the costs of credit outweigh the tax burden and if the gains from being able to opt out of social services are larger than the expected benefits and returns from public social services, indebted individuals should be less likely to support social policies.

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10 In New York City, middle-income parents can draw on the “Middle Class Child Care Loan Initiative” to take out subsidized early child-care loans. In the U.K., NGOs such as the Social Market Foundation have proposed a National Childcare Contribution Scheme that would allow parents to borrow up to £10,000 to help parents pay for childcare.
Economic Security as Mediator

The precise form of the relationship between individuals' debt leverage and their preferences for social policies—via the combination of material rivalry and the ability to opt out of public social services—depends on two factors: the first is the use of credit and the associated type of debt. When debt is used for consumption purposes, for example to smooth income losses in the event of unemployment or to meet higher expenditures in the event of a financial shock, the material rivalry between tax and debt burden will strongly shape demands for social policies. Considerations about opting out of social policies are less important since borrowers in this case address temporary income volatility or sudden higher expenses that typically do not yield future payoffs. By contrast, when debt is used for investment purposes such as mortgages, education, or financing childcare or time off work, both considerations about material rivalry and opting out are at play.

The second factor is about individuals' overall economic security and determines the relative importance of both mechanisms. When welfare states provide incomplete support to address socio-economic risks such as unemployment or sickness or to help individuals and their families seize and realize social opportunities such as subsidized childcare and education and paid leave policies, many families borrow money to fill these financial gaps if their countries' credit regime allows them to do so. For some, this investment pays off and sets them on a path toward upward mobility and economic success, for example when financing private childcare allows the mother to return to work, combining family and career, when leaving work for educational purposes or financing college altogether leads to higher income in the future, or when taking out a mortgage provides shelter and financial security in old age once the mortgage is paid off. For others, however, the turn to credit markets becomes a strenuous financial burden. Income volatility, household debt, and the combination of both amplify risks and add toward economic and financial insecurity, leading to material deprivation—in the worst case bankruptcy—and negatively influences subjective well-being and mental health.\textsuperscript{11}

The link between debt leverage and preferences for social policies, driven by the combination of material rivalry and the ability to opt out of social services, thus depends on how economically secure individuals perceive themselves. Economic security then shapes the extent to which the costs of credit outweighs the tax burden and whether the gains from being able to opt out of social services are larger than the expected benefits and returns from public social services.

\textsuperscript{11}See, for example, Catalano (1991); Chou, Parmar and Galinsky (2016); Helliwell and Huang (2014).
In sum, I expect a large "investment debt burden" to be associated with lower support for social policies. Economic insecurity may play a smaller role for this type of debt since material rivalry and the expectation of higher payoffs in the future outweigh the costs of tax-funded government benefits. By contrast, a larger "consumption debt burden" will only be associated with lower support for social policies in cases where subjective economic security is high. This can be individuals who borrow money to address temporary income volatility but are otherwise economically stable. Those who carry a large amount of consumption debt and feel economically insecure are more likely to support social policies because the benefits derived from public social insurance outweigh the financial burden of debt.


In the previous section, I argued that support for social policies depends on the combination of two factors: what type of debt and how much of it individuals carry and how economically secure they feel. In this part, I put this argument to an empirical test. I use two survey items that tap into respondent's preferences for redistribution and social insurance. The first question asks respondents to what extent they agree that the government should do more to reduce differences in income levels, the second question to what extent they agree that the government should do more to help people who become unemployed. I look at two different types of debt: mortgage debt and credit card debt. In the first cases, borrowers took out loans to invest in financial assets (housing). Credit card debt, by contrast, is more likely to be used to smooth income losses or finance emergencies. Others may use credit cards to finance higher expenditures. Unfortunately, I do not observe the reasons why individuals borrow. The purpose is clear for mortgage and student debt, but less so for credit cards and other forms of unsecured debt. While I cannot distinguish between investment and consumption reasons for unsecured debt, I am interested in the interaction between both types of debt and respondents' subjective economic security. In this case, I use a specific question about how worried respondents are about their current job situation. This question taps directly into respondents' sense of job safety and thus their ability to meet regular debt payments. Self-reported measures of economic security are preferable to other proxies of economic circumstances such as income because indebtedness, both in absolute terms and relative to assets, increasingly affects all rungs of the income distribution (Hodson, Dwyer and Neilson 2014; Porter 2012). Feelings of economic deprivation are a more powerful factor explaining demands for social policies than income alone.
Debt levels alone, however, are likely to yield biased predictions of social policy preferences because individuals with similar amounts of debt but different levels of income or wealth may hold different preferences. Instead, I look at respondent’s debt leverage, that is the ratio of debt levels relative to assets. As before, I scale mortgage debt by total assets, that is liquid assets such as money in checking and savings accounts, bonds, and other stock holdings, as well as illiquid housing wealth; I scale credit card debt by liquid assets.

As before, I use entropy balance to address imbalances between respondents who are concerned about their current job situation and those who are not. To create treatment and control groups, I assign those with scores of eight or higher on the ten-point scale into the “very worried” treatment group and those with scores of two or lower into the “not worried” control group. With measures for social policy preferences, debt leverage, and concerns about their job situation, I separately estimate how different types of debt influence policy preferences over redistribution and social insurance as a function of respondent’s subjective economic insecurity. The regression model is as follows:

$$Y_{ic} = \beta_0 D_{ic} + \beta_1 W_{ic} + \beta_2 (D_{ic} \cdot W_{ic}) + \mathbf{X}_{ic}' \gamma + \alpha_c + \epsilon_{ic}$$

(6.19)

where $Y_{ic}$ is the survey response of individual $i$ in country $c$ for each of the two questions about redistribution and social insurance. $D_{ic}$ is the respondent’s debt-to-asset ratio, either for mortgage debt or unsecured debt. $W_{ic}$ is a dummy variable indicating if the respondent is very worried about her current job situation or not. $\mathbf{X}_{ic}$ is a matrix of the same individual-varying controls as in the previous models based on equation 6.17. $\alpha_c$ are country-level fixed effects controlling for fixed differences across countries. $\epsilon_{ic}$ is the idiosyncratic error term. I estimate four different regression models, one for each survey response and debt leverage type. For mortgage debt, I estimate the model for homeowners only. To ease interpretation of the interaction effects, the panels in Figure 6.5 show respondents’ predicted support for redistribution and unemployment insurance as a function of mortgage debt leverage (panel (a)) and credit card debt leverage (panel (b)) and their subjective level of economic insecurity. Respondents with larger amounts of mortgage debt relative to total assets are, on average, less likely to support social insurance spending and redistribution

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12 I balance on age, net income, gender, number of children at home, homeowner status, family status (four categories), and education (seven categories).

13 For credit card debt: $N_{treated} = 1,719; N_{control} = 3,240$. For mortgage debt: $N_{treated} = 992; N_{control} = 1,895$. Figure A.6.2 in the appendix shows the balance plot.

14 Full regression results, including the baseline models without the interaction term, appear in Table A.6.8 in the appendix.
Figure 6.5: Predicted Support for Public Social Policies and Job Protection by Debt-to-Asset Ratio and Economic Insecurity

Notes: Results for each debt and social policy type come from separate regression models based on the entropy-balanced dataset. Mortgage debt is scaled by total assets including housing wealth. Credit card debt is scaled by liquid assets. Exact question text for redistribution: “The government should do more to reduce differences in income levels.” For unemployment insurance: “The government should do more to help people who become unemployed.” The five-point answer categories for the social policy questions range from strongly disagree to strongly agree and are recoded to range from [-2,2] where higher values indicate more support. Full results appear in Table A.6.8 in the appendix.

as their debt leverage increases (-0.04, p < 0.01 for social insurance; -0.05, p < 0.01 for redistribution). This effect is independent of how worried respondents are about their current job situation, suggesting that expected future payoffs of owning a home as a nest egg and form of self-insurance outweigh the demand for more social policies even among those who are worried about their job situation. By contrast, among respondents who carry more
credit card debt relative to their liquid assets, worries about their job is a decisive factor that influences whether higher debt leverage translates into more or less support for social policies. As in the case of mortgage debt, those who feel economically secure and are not concerned about their job are less likely to support more social insurance and redistribution as their credit card debt leverage increases. This is because the costs of debt and interest payment outweigh the tax associated with more social spending. Yet individuals who use their credit cards to smooth temporary income losses or to finance sudden expenses and experience high levels of economic insecurity turn to the government for support because government benefits, even though impose a tax burden on individuals, outweigh the financial burden of debt and interest payments. Those who are very worried about their current job become slightly more supportive of social policies as their debt burden increases.

These findings support the hypothesis that the relationship between debt leverage and preferences for social policies, driven by the combination of material rivalry and the ability to opt out of social services, depends the type of debt and on how economically secure individuals feel. But in the case of mortgage debt, higher debt leverage is associated with declining support for social policies. Economic insecurity matters barely as material rivalry and in particular the expectation of higher payoffs in the future outweigh the costs of tax-funded government benefits. In the case of credit card debt, economic insecurity becomes the dividing force. Individuals who borrowed money to address temporary income volatility but are otherwise economically stable demand less support from the government, whereas those who are economically unstable demand more because the benefits from public social insurance outweigh the material rivalry between debt, interest, and taxes.

These findings have two implications. Those who are well-off and economically secure are more likely to opt out of social policies and less likely to overall support greater welfare spending. In other words, it matters whether those who are using credit as a private alternative to public policies perceive their own economic security as stable or not. Relatedly, debt divides the political space of social solidarity. Higher levels of debt only translate into more demands for public social policies when individuals feel less secure. Yet among those who are economically secure, a higher debt load makes them less likely to favor both redistribution and social insurance.
6.4 The New Landscape of Risks and Opportunities

In light of a growing mismatch between families’ financial needs and welfare states’ financial support, credit markets have entered the arena as private alternatives to basic social services. Increasingly, families go into debt to pay for basic social services and to cover income losses that in many cases used to be provided for or addressed by traditional social policies. In this final section, I show that shift from the public provision of social services to credit markets as means of addressing risks and guaranteeing social opportunities has also influenced the way economic risks are distributed within society.

**Indebtedness and Risk Amplification**

The allocation of risk depends on the purpose for which credit is used as well as on the current and, more importantly, future economic circumstances of the borrower. Borrowing to invest in housing, education, or to finance child-related expenses such as childcare or supplement paid leave of absence, may yield a higher return in the future compared to pure income-smoothing in the case of unemployment. But the economic risks attached are crucially dependent on the borrower’s future income trajectory and her ability to make regular debt and interest payments.

Tax-funded social services such as unemployment insurance, public education, or subsidized childcare carry no such income risk because costs are borne by society and payouts based on eligibility criteria. Borrowing money to privately obtain these services, however, adds additional layers of risk onto families’ shoulders. Many households that are highly leveraged and carry large amounts of debt relative to their income are often only one financial shock away from deeper financial trouble. Missed debt repayments and arrears can easily lead to bankruptcy. Credit is not an insurance mechanism and rather amplifies risk by making borrowers more vulnerable to future interest rate increases or income losses that threaten borrowers’ ability to keep up with regular debt payments. Since access to credit is likely to be pro-cyclical, borrowing becomes harder during times of economic distress, which can exacerbate existing economic insecurity.

This form of credit-driven risk amplification has gone furthest in the U.S., where borrowing for investment and consumption reasons is prevalent among households across all rungs of the income ladder. With a weak social safety net, risks spread easily from one domain to the other and are often made worse by large levels of debt. Take the example of unemployment: job loss in the U.S. not only leads to income loss but in most cases also to the loss of health.

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insurance coverage. Since unemployment insurance benefits are limited, a steep income loss that is coupled with higher expenditures for healthcare can push families into bankruptcy (see Himmelstein et al. 2009; Porter 2012). In Denmark, by contrast, risks associated with higher levels of debt are limited and less contagious. Household debt is concentrated in the middle- and higher-income strata and the social safety net provides much higher levels of support for lower-income individuals. And since health insurance coverage is not tied to one's job, the financial consequences of job loss are contained.

Lastly, debt is a new form of inequality. Lower-income households often devote a larger share of their income to debt and interest (re-)payment than higher-income households, not least because they are charged higher interest rates than households deemed more credit-worthy. Unlike progressive taxation, debt is regressive because of differential interest rates as well as provisions in many tax codes that allow for a generous deductibility of interest payments (for example the mortgage interest deductibility in the U.S. and Denmark).

Unequal Financialization

Social insurance programs during the postwar era were designed to help individuals financially without relying on market income—they supposedly "de-commodified" individuals, in Esping-Andersen's (1990) famous words. But as Jonas Pontusson (2011) points out, even the most comprehensive welfare states of the Nordic countries do not attempt to decommodify their citizens. Quite to the contrary, their focus is on employability that would empower individuals to participate in labor markets through a set of "activation policies." The rise of credit markets as a private alternative to social insurance and social investment policies can be seen as a similar form of tying individuals deeper into financial markets. The transformation toward a "portfolio society" (Davis 2009, p. 193) and the rise of a "new finance culture" (Fligstein and Goldstein 2015) have gone furthest in the U.S. and U.K., but Denmark and the Netherlands are approaching similar levels of financialized societies.

Access to credit has become a dividing line between those who can borrow money to "move onward" and deal with socio-economic risks and those who borrow to "move upward" and seize social opportunities. Jacob Hacker (2008) put the spotlight on the "great risk shift," demonstrating how in the U.S. responsibility for individuals' economic security shifted, both through deliberate policy choices and haphazardly through policy drift, away from the broad shoulders of society's welfare state onto the smaller shoulders of individuals themselves. And yet it is not just risks that have shifted away from the arena of social policies. It is also social opportunity and mobility. Individuals are increasingly personally responsible to manage
their own risks as well as their own opportunities—and credit has become an increasingly
important way to achieve this. Loans for private education and mortgages for housing
are the more obvious cases where access to credit is almost always necessary to participate
in these markets; yet other, less well-known areas such as paying for childcare or financing
leaves of absence have also become financialized.

Even though credit plays a prominent role in many people’s daily life, access to credit is
not distributed evenly across society. Nor is credit a social right. Access to public goods,
including unemployment or sickness benefits, public education, subsidized childcare, or paid
parental leave, is based on citizenship or tax- and insurance contributions and depends on
politically-determined rules. By contrast, access to credit markets and the cost of borrowing
follow a different logic. They are based on lenders’ business consideration and whether these
lenders perceive borrowers as creditworthy. While most countries have anti-discriminatory
policies in place that aim to guarantee fair and equal lending processes, lenders charge
different interest rates or exclude prospective borrowers for other reasons. More importantly,
private lenders are not accountable to citizens in the way elected officials are. The growing
importance of credit markets as a private alternative to social policies and an instrument
to manage risks and opportunities comes at the expense of democratic legitimacy, declining
public accountability, and growing influence of private lender. Those who do have easy access
to credit differ in their expectations from the government and preferences for social policies
from those who have a hard time tapping into credit markets.

The Reinforcing Political Logic of Credit

I demonstrated that those who carry large amounts of debt but feel economically secure have
different political expectations than those who feel less secure. The well-off are more likely to
use credit to supplement social investment policies or replace them in domains where public
support is lacking, making them less likely to support redistributive and social insurance
policies. This is because debt and interest payments rival tax payment, because individuals
opt out of social policies by drawing on credit and want to safeguard the private returns
to their “investment,” or a combination of both. Those who are economically insecure and
highly indebted still demand more from the government, but it becomes less likely that their
voices are heard and translated into policies. Existing work on the U.S. (Bartels 2010; Gilens
2012) and Europe (Elsässer, Hense and Schäfer 2017; Streeck and Schäfer 2013) shows that

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15 On the influence of the notions of personal responsibility on public policies and the welfare state see Mounk (2017).
16 Certain banks with public mandates such as German Sparkassen can have different accountability rule.
the political influence of social groups is tilted toward higher-income classes, suggesting that those who depend on social policies the most may no longer get adequate support if the more well-off are privately insured through credit markets and prefer less spending on social policies.

There is also a subtler notion of how credit alters individuals’ understanding of politics and their relationship with the welfare state. “Visible” social policy programs such as unemployment insurance or pension benefits not only provide financial support but also link individuals with the welfare state and create powerful policy feedback effects that sustain these programs in the long run (Campbell 2012; Pierson 1994). Yet in many countries, the visibility of social policies has declined as welfare states have turned into “hidden” (Howard 1997) and “submerged” (Mettler 2011) bystanders in the arena of government policies. Tax expenditures or tax breaks such as tax credits for childcare or college tuition, particularly common in the U.S. and the U.K., are rarely recognized by recipients as government benefits and thus fall short of the same level of public support that other, more visible programs generate. This also changes the fundamental nature of citizens’ relationship with their government, contributing to further distrust and a sense of the government “failing” its citizens. Credit, albeit not a part of the public welfare state unless loans are publicly-subsidized, is characterized by a similarly hidden nature. Individuals borrow from their future self, which blurs the line between who funds and who benefits from current expenditures.

The welfare state draws on past and current tax payments and insurance contributions from citizens and contribution-payers, whereas credit markets pool resources to lend money while keeping the relationship tight between the borrower and the lender. In contrast to private insurance markets that still contain elements of solidarity through shared risk pools, credit markets are based on individuals’ personal responsibility to repay their debt. As credit markets allow individuals to opt out of the public provision of social services in favor of private solutions, support for public options declines and the ones depending on public benefits are increasingly left out. Instead, pro-credit policies gain the upper hand.

In sum, the invisibility of credit and the transfer of funds from the borrower’s future self to the present undermines the notion of social solidarity that is essential for a functioning welfare state, resulting in lower levels of support for social policies and a growing bifurcation of society between those who can easily access credit markets and those who cannot.
Conclusion

"Credit reports touch every part of our lives. They affect whether we can obtain a credit card, take out a college loan, rent an apartment, or buy a car—and sometimes even whether we can get jobs."

Before the financial crisis of 2008 hit, the rise in household debt in many advanced economies during the previous decades has largely gone unnoticed. Growing evidence now suggests that economic downturns and financial crises tend to be preceded by strong increases in household debt. Once credit bubbles burst, recessionary tendencies are fueled by highly-indebted households that cut consumption the most.\footnote{See, for example, IMF (2012); Jordà, Schularick and Taylor (2013, 2016); Mian and Sufi (2014); Mian, Sufi and Verner (2017); Mian, Rao and Sufi (2013).} What is less well understood, however, is why so many households took on large amounts of debt. Political scientists also know little about why household debt in some countries has climbed to unprecedented levels but remained stagnant in others.

These questions pushed me to develop a new perspective on the rise in household debt and its variation across and within countries. The growing influence of financial markets occurred at a time when fundamental transformations of our economies, from the changing nature of jobs and life-course trajectories to the retrenchment of welfare states, had a strong financial impact on households across the OECD world. In many cases, households have to shoulder a larger share of the financial burden of social risks such as unemployment or sickness and take more responsibility for their own social opportunity to raise a family, get education, or obtain a home. Credit markets have become an important instrument to address financial gaps and growing expenditures. The links between growing credit markets and changing welfare states open up a range of questions. Under what circumstances can credit markets replace the role of welfare states to address both social risks and promote social opportunities? And what are the socio-economic and political consequences of households’ borrowing money to pay for basic social services? Credit is rarely seen as part of the welfare regime but has become
a social phenomenon of great relevance because it increasingly serves functions similar to those of social policies. Credit markets distribution of resources, help insurance against risk, and enable investment in personal and financial assets. This role of credit markets and the distributional consequences are largely missing from research on income and wealth inequality focuses on the redistribution of public resources from the ones who have to the ones who have not but neglects how social policies interact with credit markets.

This dissertation sought to address these questions. In Chapter 1, I offered a social policy theory of everyday borrowing that helps explain variation in household debt across and within countries by demonstrating that credit fills the gap between families' financial needs and welfare states' financial support—a gap I refer to as social policy shortfall. I argued that the social policy shortfall is the outcome of changes in labor markets, families' life-course trajectories, and welfare states. On the one hand, the transition of stable Fordist economies into flexible knowledge economies has brought more disruptions in families' employment patterns and life-course trajectories. As a result, families not only experience income losses due to unemployment or sickness but also due to voluntary decisions such as taking time off work for education or to raise a family. On the other hand, welfare states have often not kept up with these disruptions. Retrenchment and policy drift have led to incomplete provision of social benefits and services, resulting in social policy shortfalls. Increasingly, families go into debt to pay for basic social services and to cover income losses when traditional welfare programs are or have become incomplete.

From a comparative perspective, the variation in debt levels across countries and across households then hinges on two central factors: first, the size and type of the social policy shortfall determine families' demand for credit to fill financial gaps. Second, the structure of the credit regime restricts or permits borrowing by individuals and influences whether credit emerges as an instrument to allow households to compensate for social policy shortfalls. As I explained in Chapter 3, these credit regimes can either be permissive, allowing individuals to easily tap into credit market to borrow money, or restrictive, making it much harder for individuals to access loans, depending on the institutional bonds between banks, businesses, and households and the supporting policies, especially regulatory and fiscal policies, that together channel credit flows either toward households are away from them. In sum, credit markets can mitigate the consequences of social risks and help harness social opportunity. And while credit markets and welfare states share surface similarities based on the roles they play, the follow different underlying logics, each with its own socio-economic consequences.

The empirical chapters, beginning with Chapter 2, documented the financial impact of
fragmented employment patterns and life-course trajectories on households’ incomes based on the three country cases of Denmark, Germany, and the U.S. and showed to what degree welfare states across these countries absorb these financial consequences. In Chapters 4 and 5, I tested to what extent the size of social policy shortfalls leads to more borrowing among affected households using administrative records of the entire Danish population since the late-1980s and several micro-level panel data sets from the U.S. and Germany that allow me to track these households over time. I demonstrated that credit can fulfill social insurance functions (Chapter 4) as well as social investment functions (Chapter 5). The findings of both chapters support the theory that larger social policy shortfalls increase borrowing and subsequent debt levels in cases of permissive credit regimes. Lower-income Danish families receive more financial support in the case of unexpected income losses from their welfare state compared to lower-income American families, resulting in a larger social policy shortfall and more borrowing among the latter. Yet it is higher-income families in both Denmark and the U.S. that draw on credit to cover the financial burden of deliberate life-course choices related to taking time off work, education, or child-rearing. The permissive credit regimes of both countries make credit easily available and enable families to borrow in order to compensate for the social policy shortfall. By contrast, the German credit regime restricts borrowing opportunities for many families. Despite wide-ranging welfare reforms and considerable cuts in social benefits in the 2000s, German families are not borrowing money to fill growing financial gaps because they cannot easily tap into credit markets.

In this concluding chapter, I situate these findings and discuss their implications for how scholars and policymakers think about the role of financial markets and household debt in a world of changing labor markets and welfare states. I also consider the normative implications of credit as a private alternative to social policies and the implications for inequality and insecurity.

Credit Markets and Welfare States: Functional Similarities, Different Logics

Throughout this dissertation, I emphasized the duality of credit. For some people, credit is a form of insurance and a means to make ends meet. As two observers put it,

[i]n [the American] economy most low- and moderate-income people **borrow to live** on their income. They are not borrowing to keep up with the Joneses; they are borrowing to stay afloat, to keep up with payments for housing, food, transportation, and health care (Retsinas and Belsky 2008, 3, emphasis added)

But credit is not only about consumption and “borrowing to live.” Nor is borrowing only a
response to welfare state retrenchment. Credit can also compensate for the growing financial burden of interrupted employment and life-course trajectories, educational choices, and child-rearing. In other words, as credit markets turn into private alternatives to social policies, they provide social insurance functions as much as they help individuals to seize social opportunity.

But underneath the surface of functional similarities between credit markets and welfare states linger more fundamental differences that have political and socio-economic downstream consequences. Welfare states and entitlements to various social programs are based on social rights and politically-determined eligibility rules. These publicly-financed social policies draw on tax- and contribution-payments and thus distribute resources within the common pool based on universal claims based on human or citizenship rights or “earned” claims based on past contributions. By contrast, credit markets draw from a common pool of deposits but ultimately distribute resources from individuals’ future self to the present, thus creating inter-temporal obligations. Instead of distributing fiscal resources through the political system, credit markets distribute resources through the financial system, where high-income earners accumulate financial wealth by lending their deposits to the bottom earners (Kumhof, Rancière and Winant 2015). While the welfare state rests on legally-enforceable social rights, there is no equivalent (social) right to credit even though there are debates about whether credit ought to be a social right. Instead, access to credit is in most cases driven by business decisions and depends on whether lenders deem prospective borrowers credit-worthy. Once granted a loan, the cost of credit is deferred into the future when the principal amount and interest rates have to be repaid. This is in stark contrast to the funding structure of the welfare state, where costs are front-loaded through tax- and contribution-payments. In contrast to welfare states, which are based on entitlements and guaranteed claims, credit markets, which grant financial liquidity based on promises and expectations of repayment, favor some groups over others, expose rather than shield individuals from market outcomes, and add an additional financial burden in the form of debt and interest payments onto the shoulders of individuals.

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18Muhammad Yunus, the founder of the Grameen Bank and winner of the 2006 Nobel Peace Prize, for example argues that credit should be seen as a human right: "Every poor person must be allowed a fair chance to improve his/her economic condition. This can be easily done by ensuring his/her right to credit" (quoted in Gershman and Morduch (2015, p. 14). For more on the debate of credit as a social right see, for example, Gershman and Morduch (2015); Hudon (2009).
Indebtedness, Inequalities, and Insecurity

Welfare states aim to protect, free, and “decommodify” individuals from the vagaries of markets (Esping-Andersen 1999); relying on credit does the opposite and draws individuals more into markets and can create and amplify source of inequality, risk, and insecurity. Access to credit is the perhaps the most important source of inequality. Individuals with very good credit scores and employment and income records can easily borrow money, while those with worse scores and more scattered and volatile employment and income records are deemed less creditworthy and therefore have to pay higher interest rates to obtain loans. Others have no access to formal credit markets or even banking services at all and, instead, rely on informal lending services such as payday lenders or pawnshops. These inequalities also stretch into debt repayment, since lower-income individuals typically spend a larger share of their income meeting debt and interest payment than higher-income individuals. These inequalities in access to credit can further translate into different use of credit. Throughout this dissertation, I emphasized the bifurcated nature of credit. While some individuals rely on credit to smooth consumption in the case of involuntary or voluntary income losses, others borrow money to invest in housing or education. Yet some individuals are precluded from seizing social opportunities if they cannot get access to credit. This turns into a significant problem for these groups as credit markets increasingly determine individuals’ life chances and have become alternatives and in some cases substitutes for public policies, leaving those who have a difficult time borrowing money with fewer options.

Credit scores themselves are no longer confined to differentiate the risk of lending to individuals, thus influencing who gets credit at what price. They also influence the prospects of renting an apartment and, as evidence from the U.S. and Sweden suggests, getting and retaining jobs (Bos, Breza and Liberman 2016; Dobbie et al. 2016). Recognizing that people with bad credit have lower labor market chances, the New York City Council in 2015 banned employers from using individuals’ consumer credit history in making employment decisions, joining eleven states that already limit employers’ use of credit information in employment.

These differences in access to and affordability of credit have downstream consequences for social mobility and wealth inequality. On the one hand, credit can less inequality by providing individuals financial opportunities they would otherwise not have, for example granting loans for housing or education to lower-income individuals, setting them up for a path of upward social mobility. Yet credit can also aggravate existing inequalities, for example when credit is the only way to get housing or education but chances or securing loans are distributed unequally. Biases in financial services have deeper historical roots, for
example stretching back to the infamous practice of “redlining” housing areas in the U.S., in which banks and other lenders systematically discriminated against lower-income and minority households based on community demographics. Racial injustices are still common in the credit system, despite anti-discriminatory regulation. Ross and Yinger (1999) found that in the U.S. African-Americans and Hispanics face higher rejection rates and obtain mortgages to much less favorable terms than whites with similar credit and income characteristics. This has led to “dual-mortgage markets” (Immergluck 1999) that are separated in prime lending, concentrated in high-income and white communities, and subprime, often predatory lending, concentrated in lower-income minority areas (see also Pager and Shepherd 2008).

Homeownership, an important cushion of financial wealth, is increasingly hard to reach, not just for lower-income and minority households, but also for middle-income households. College tuition and childcare costs have increased rapidly in countries such as the U.S. and the U.K. Both trends increase households’ financial burden and, since many of these investments are financed through borrowed money, the amount of debt they carry relative to their income.

Growing debt leverage also affects households’ economic insecurity because it makes them more vulnerable to sudden income losses or unexpected expenditures in the future. When incomes are stagnating, any increase in debt decreases households’ disposable income due to rising interest and debt repayments, thus reducing the financial leeway households have to address future financial gaps. But not all indebted households face similar levels of economic and financial vulnerability. On the one hand, individuals who are economically-secure because they have sufficient assets, incomes, and secure jobs that provide a financial cushion and the ability to regularly pay off their debts are more likely to be able to shoulder larger levels of debt. Yet many households do not possess enough assets, in particular liquid savings, to weather financial shocks (Lusardi, Schneider and Tufano 2011). On the other hand, individuals’ exposure to economic risks depends on macro-level institutions that mitigate the likelihood of these risks and how severe the consequences are once these risks occur. Consider the example of job loss. In Denmark, the flexible labor market comes with a comparatively high risk of job loss, but the welfare state contains the financial consequences by providing relatively generous unemployment support. Even in the case of unemployment, Danes are therefore able to meet regular debt and interest repayments. By contrast, job loss in the U.S. has much broader financial consequences that are not limited to earnings loss. Unemployment insurance benefits are lower and shorter compared to Denmark, but perhaps even more consequential is the looming risk of losing other types of social protection such as
health insurance, which is in most cases tied to employment. Income volatility or outright income losses quickly increase financial insecurity of indebted families when social benefits that could provide income support are limited. This can easily lead to a downward spiral as weak unemployment insurance benefits themselves are a driving force of indebtedness, as I have shown in Chapter 4. This also helps explain why American households are at much higher risk of bankruptcy and foreclosure than Danish households, even though the latter carry higher levels of debt (Porter 2012). The consequences of indebtedness and insufficient wealth are not only limited to heightened economic and financial risk but also negatively affect health outcomes (Turunen and Hiilamo 2014) and employment prospects (Bos, Breza and Liberman 2016).

The Politics of Credit and the Future of Welfare States

The central argument of this dissertation, in brief, is that credit can fulfill social policy functions in permissive credit regimes. Turning credit into a private alternative to the welfare state, both for social insurance and social investment, influences individuals’ support for publicly-funded social policies and the nature of welfare states. In Chapter 6, I showed that individuals who enjoy easy access to credit are less likely to support the welfare state even if they face future risks of unemployment because they feel more economically secure and perceive credit as a private alternative to social insurance. This leads to feedback effects that further undermine the welfare state and leave individuals that are economically insecure and have a harder time accessing credit markets with limited social policy support.

On the flipside, individuals who tap into credit market and are economically well-off become more invested in pro-credit policies that protect their access to credit and wealth holdings, in many cases at the expense of support for tax-funded social policies. Political battles over property tax rates and interest deductibility of tax expenditures are fought with powerful constituencies with vested interests in favor of advantageous credit policies writ large. There are at least two factors that can help explain the link between indebtedness and support for social policies among those who are economically secure. First, the material rivalry between debt and interest payments on the one hand and tax payments on the other can make individuals less likely to support tax-financed social policies because of the growing financial burden caused by debt payments. Second, individuals who borrowed money to invest in housing, education, or childcare want to reap and protect the benefits of their private investment. As a consequence, they chose to “opt out” of publicly-provided social services and lower their support for welfare policies. The consequence is that households that
have to rely on credit to address income losses because the welfare state already provides incomplete protection are likely to be worse off in the future because support for the welfare state among those who are privately-supported through credit markets is crumbling, making it more likely that welfare states offer fewer benefits in the future. Moreover, since the cost of credit is already higher for economically-disadvantaged groups, the shift toward credit as a private alternative further increases the financial burden of these households.

It seems that the growth of credit markets can drive a wedge in society between groups that do enjoy easy access to credit and borrow money for social insurance and social investment purposes and groups that do not easy access to credit and draw on declining support from welfare states. In combination with unequal access to credit, the shift in public opinion proves consequential for the future of the welfare state and social solidarity. Welfare states rest on collective and horizontal solidarity, by which I mean that current tax- and contribution-payments fund different welfare programs. Credit markets require no such solidarity since they are based on the distribution of resources from the future to the present. The borrower repays her loan with interest, thus owing only to herself. The move of credit markets into the domain of welfare states can therefore threaten the very social solidarity on which welfare states are built. In high-tax countries like the Nordics, rising levels of debt might fuel a backlash against the welfare state if those who bear most of the fiscal burden financing the welfare state perceive credit as a private alternative to welfare policies and are no longer willing to “pay double”—once in the form of taxes and once in the form of debt and interest payments.

Lastly, this dissertation opened a window into the politics of credit, arguing that rising levels of household are linked to the interaction of social policy shortfalls and the permissiveness of credit regimes. The findings shed light on the micro-level implications of macro-level argument about broader shifts from an economic system of Keynesian demand management in which governments took on debt to finance expenditures to a system that Crouch (2008) calls “privatized Keynesianism” in which it is households that take on debt. Krippner (2011), among others, argues that the turn to finance and the subsequent rise in credit is largely the unintended consequence of political responses to constraints on limited fiscal resources and fading confidence in governments’ ability to solve economic problems (see also Davis and Kim 2015). Moreover, credit has valuable features for policymakers who face distributional conflicts, conflicting demands, and fiscal constraints. It allows policymakers to circumvent politically-difficult choices of allocating scarce resources by shifting these choices into the market domain by incentivizing lenders to expand access to credit, subsidizing loans, or
directly offering credit through GSEs. Credit also offers a financial solution to pressing problems without immediately adding significant costs to the public budget that are visible to eyes of taxpayers.\(^\text{19}\)

Yet the growing influence of credit markets and rising levels of household debt over the past decades have also sparked popular protests and political action in some countries. As I mentioned before, states and localities in the U.S. have begun to limit how employers and use credit reports. Other societal groups have pushed for more limits on lending and debt moratoria, granting overindebted individuals more time to settle their debt. Indebtedness may also affect politics and vote choice more subtly through the channel of economic insecurity, which has been found to lower trust in government (Foster and Frieden 2017; Wroe 2016) and increase support for populist parties (Mughan, Bean and McAllister 2003). Welfare states and employment-focused systems of social protection mediate the link between economic insecurity and vote choice for populist parties because it dampens economic insecurity and weakens support for populist and far-right parties (Swank and Betz 2003). Credit markets, by contrast, can have the opposite effect and create and amplify economic insecurity, especially when households go into debt to fill gaps left by incomplete welfare state support, and further fuel political discontent.

**Future Extensions**

This dissertation studied the circumstances under which credit markets replace the role of welfare states and the socio-economic and political consequences of households’ borrowing money to pay for basic social services. While this project leaves us with answers to these questions, it opened up a set of new ones.

Studying the financial lives of families across and within countries requires considerable amounts of micro-level panel data to track these families over time. The data sources deployed in the empirical chapter of this dissertation provide a wealth of information on assets, liabilities, and labor market status but fall short on important dimensions. First, how easy and costly is it for individuals to borrow money? In our cross-national survey, we included several questions about various aspects of credit access, but the panel dataset used in Chapters 4 and 5 do not have such information. The findings from these chapters therefore underestimate the effect of social policy shortfalls on household debt if I only observe individuals who do have access to credit and are therefore able to borrow. The flipside is that I cannot distinguish between individuals who are not borrowing because they cannot

\(^{19}\)The only exception, of course, are large-scale bailouts of overexposed lenders when things go bad.
access credit from those who could but choose not to. Moreover, the data only captures formal credit markets, that is loans from banks and other regulated lenders, but leave out information credit markets such as payday loans, pawnshops, or loans from families and friends. In the U.S. and the U.K., informal lending markets play a much larger role than in other countries like Germany and Denmark (Servon 2017). In part, this is driven by different regulatory rules ranging from limiting loan origination to banks only as in Germany to more liberal regulatory rules in the Anglo-Saxon and Nordic countries.

Second, the data capture assets and liabilities only on an annual basis and therefore mask changes in the stock of debt and savings throughout the year. While it less likely that individuals would pay off $1,000 dollars worth of debt in one month and take on an additional $1,000 dollars in the next, changes in the overall stock of debt would go unnoticed. Both limitations suggest fruitful areas for further research. Collecting information on access, cost, and type of credit, including informal lending markets, will shed more light on the distribution effects of using credit as a private alternative to social policies. Survey data is also better suited to ask individuals directly about the various reasons for why they borrow money—items that are largely missing in current surveys.

The scope of this project is limited to OECD countries and draws on detailed empirical evidence from Denmark, the U.S., and Germany. All three cases represent different combinations of labor market, welfare, and credit regimes. But the “social policy theory of everyday borrowing” is not limited to these countries and additional country-pairs can offer fruitful tests of additional observable implications of this theory that are beyond the scope of this project. The Netherlands, for example, is often grouped together with Germany as a coordinated market economy, but has a much more financialized economy, providing fertile grounds for ind-depth comparison of two coordinated market economy. In the U.K., a poverty research project found that welfare reforms disproportionately affect lower-income individuals and push them into debt at a rate of over £200 per month. In addition, I limited the focus on the links between household debt and social policy shortfalls in two domains: disrupted employment patterns, particularly unemployment, in Chapter 4 and fragmented life-course trajectories and family policies in Chapter 5. Yet these are not the only domains in which shortfalls arise. The bundle of social policies ranges from housing and pensions to health care and education. Studying the cross-national variation in different ways of organizing and financing policies in these domains, to what extent costs have been shifted further onto the shoulders of households, and what role credit as a private alternative plays.

20"Poor families hit by welfare reforms ‘running up £52 of debt every week’," The Guardian, March 26, 2014.
Lastly, the concept of “credit regimes,” introduced in Chapter 3, highlights how the relationships between banks, business, and households and the policies and politics supporting them shape households’ access to credit markets. What that chapter leaves out, however, is the study of the origins and the distinct developments of credit regimes over time. Credit regimes are the outcomes of government intervention in markets, because it is governments that create and nurture institutional bonds between banks, businesses, and household and create liquidity by setting regulatory rules and standardization (see Car- ruthers and Stinchcombe 1999). This links, however, have received little attention in the literature on comparative political economy and financialization but are crucially important to foster our understanding of cross-national variation in the influence of financial markets on economies and societies and, perhaps closest to the topic of this dissertation, the future of welfare states.

Behind all the dataset and statistical evidence gathered in this project are individuals and families that feel the financial consequences of changing labor markets, life-course trajectories, and welfare states. The structure of social policies matters for individuals’ financial lives and their debt burden. Frank Walsh, the electrician from Maryland from Chapter 4, who lost his job and ran up about $20,000 in credit card debt to make ends meet, would perhaps have stayed out of financial trouble had he lived in Denmark where he could have drawn on more generous unemployment benefits. While Denmark provides generous family policies that allow families like the Miller-Harris’ in Denmark from Chapter 5 to take paid parental leave and send their child to subsidized daycare and thus balance work and family live, other countries like the U.S. lack equivalent federal parental leave policies and, instead, tend to focus more on private solutions such as the “Middle Class Child Care Loan Initiative” in New York City. But the structure of credit regime is equally important. In Germany, a country notorious for its focus on savings, access to credit is relatively difficult, resulting in much less borrowing in response to cuts in social benefits that in countries like the US would have resulted in a strong increase in compensatory borrowing. The Hartz labor market reforms, which in the early 2000s brought tens of thousands of Germans in fierce opposition to the proposed bill on the streets, drastically cut unemployment benefits but did not lead to an increase in household debt.

Debt has become a central element in many families’ daily life. At its heart, this dissertation has moved these families into the spotlight of political-economy research, hoping to spark further interest in the study of the relationship between credit markets and welfare states across and within countries and its socio-economic and political consequences.
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Appendix

A.1 Data Sources

The datasets used in this project are harmonized according to the following principles. All individual-level data is aggregated to the household level to take into account resource sharing within the household. I use to terms “household” and “family” interchangeably to capture the same underlying unit. The household head is, in line with most household-level datasets, the male person of that household. I subset all datasets to working-age individuals between the ages of 15 and 65 and exclude self-employed individuals as this group might have loans for business purposes that cannot be identified separately in the datasets. All data is inflation-adjusted.

Since data on households' assets and liabilities is highly skewed but also contain households with zero assets and liabilities, using natural log transformation is not an option because it is undefined at zero. To address this problem, I resort to a commonly used inverse hyperbolic sine transformation (IHS) defined for variable $z$ as $\sinh^{-1} z = \ln(z + \sqrt{1 + z^2})$ in which negative values and zero in $z$ are defined. This transformation is linear around the origin, approximates a log transformation at the right tail, and can be interpreted as a standard logarithmic variable (see Pence 2006). I use this IHS transformation for all income, asset, and liability variables.

Danish Administrative Register Data

In the Danish case, I use several high-quality administrative records gathered by Statistics Denmark that cover, for most variables, the entire Danish population since 1987. I link these registers based on unique anonymized personal identification numbers (CPR number) that are assigned at birth. This allows me to combine different registers at the individual level into a large panel dataset that spans several decades and contains around 55 million observations or around ca. 4.4 million unique household heads. The registers contain detailed
information on individuals' demographic characteristics, household composition, labor market attachment and social policy program participation, income and government transfers, and wealth. Data on income and wealth is based on administrative tax returns collected by the Danish Tax Agency (SKAT) and supplemented by information from third-party reporting such as banks and other financial institutions reported to the tax authorities at the end of the year. I obtained fine-grained information on individuals' liabilities including bank and mortgage loans as well as complete portfolio information including the value of stock and bond ownership and cash in bank accounts. Labor market information comes from the register-based Labor Force Statistics (RAS Statistics) and the Integrated Database for Labor Market Research (IDA). For more information on the Danish registers see, for example, (Petersson, Baadsgaard and Thygesen 2011).

The data is unique in its quality because it covers the entire Danish population over a very long time horizon. The data is not self-reported by individuals and therefore contains minimal measurement error and does not top-code assets, liabilities, and incomes. Unlike in survey-based panels, there is virtually no missing data or attrition.

In the Danish register data, a household is defined as all individuals living at the same address if they are either a registered or married couple, have at least one joint child according to the civil register, or are of the opposite sex with an age difference of less than 15 years, unrelated, and live with no other adults. All other adults living at the same address are counted as members of different families. Children are part of a family if they are registered at the same address as at least one parent, are under 25 years old, have never been married or in a civil partnership, do not have children of their own, and are not part of a cohabiting couple. In the PSID and the SOEP, households are composed of people living together who are related by blood, marriage, or adoption, or permanently living together and sharing income and expenses. I use household and family interchangeably. To ensure comparability, the default household head in all three countries is the man in the case of a couple (married or not); when the household consists of a woman alone, she is the head.

Survey of Consumer Finance (U.S.)

The Survey of Consumer Finance (SCF) is a triennial cross-sectional survey of around 6,500 US families sponsored by the Board of Governors of the Federal Reserve System and includes information on families' incomes, assets, and liabilities, as well as demographic characteristics. It oversamples higher-income households to improve representativeness in the right tail of the heavily skewed wealth distribution. The SCF data imputes missing values and issues
five multiple-imputed datasets to reflect statistical uncertainty. The SCF is considered to collect the most detailed and accurate wealth information and is often used as a benchmark to judge the validity of wealth data collected in other surveys (Eggleston and Klee 2015).

Survey of Income and Program Participation (U.S.)

The Survey of Income and Program Participation (SIPP) is a household-based survey administered by the Census Bureau and designed as a continuous series of national panels. It uses a two-stage stratified design to produce a nationally representative panel of respondents who are interviewed over a period of approximately three to four years. Within a SIPP panel, the entire sample is interviewed at various waves, generally four-month intervals. In addition to income, assets, and liabilities and public program participation, the SIPP includes data on other factors of economic well-being, demographics, and household characteristics.

I use the SIPP instead of the Panel Survey of Income Dynamics (PSID) because it contains data on household liabilities for every year of the wave. Other panel datasets such as the PSID switched to a biannual data collection and are therefore not helpful to study borrowing choices in response to income losses.

Socio-Economic Panel, SOEP (Germany)

The German Socio-Economic Panel (SOEP) is an annual longitudinal study of German households based on face-to-face interviews with all members of a given survey household aged 16 years and over. It contains a wide range of domains, including household composition, labor market status, and income and government transfers. The SOEP started in 1984, with the New German states added in 1991, and interviews a sample of around 11,000 households or about 30,000 unique individuals. See Wagner, Frick and Schupp (2007) for more information on the SOEP. A major disadvantage of the SOEP is its lack of regular information on household wealth. The SOEP began to collect detailed information on individuals' assets and liabilities in Wealth Supplements in 2002, 2007, and 2012 (see Frick, Grabka and Marcus 2010).

SAVE Study (Germany)

The German SAVE study is a panel dataset that was initiated in 2001 and produced by the Mannheim Research Institute for the Economics of Aging (MEA) with the aim to analyze
households' saving behavior. It is a response to Germany's limited availability of longitudinal panel data to analyze households' financial behavior. Existing data sources such as the German Socio-Economic Panel only started to collect information on asset and liabilities in 2002 with follow-up waves in 2007 and 2012, making it impossible to study annual changes in households' financial situation. The SAVE study includes detailed information on households' income, assets, and liabilities based on a representative sample of around 1,500 German households annually. For more information see Boersch-Supan and Essig (2005).
A.2 Appendix for Chapter 2

Figure A.2.1: Weighted Income Loss, by Income Quintiles

Notes: The dots show the average household income loss (negative values), defined as the annual percentage change in income, for all households that experience a drop in income of 25 percent or greater from one year to another, weighted by the share of households that experience an income loss of 25 percent or more. The lines in are fitted locally-smoothed polynomials. Income quintiles are based on net labor income in the prior year. The graphs for the U.S. and Germany are constructed using survey sampling weights; the graphs for Denmark are based on the full population. Sources: USA: PSID; Germany: SOEP; Denmark: administrative records.

Table A.2.1: Definition of Sources of Income Volatility

<table>
<thead>
<tr>
<th></th>
<th>Involuntary employment disruption</th>
<th>Life-course choices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>Unemployed</td>
<td>Leave of absence</td>
</tr>
<tr>
<td></td>
<td>Activation</td>
<td>Maternity leave</td>
</tr>
<tr>
<td></td>
<td>Sickness</td>
<td>Student</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Training</td>
</tr>
<tr>
<td>United States</td>
<td>Unemployed</td>
<td>Student</td>
</tr>
<tr>
<td></td>
<td>Temporary laid off</td>
<td>Homemaker</td>
</tr>
<tr>
<td></td>
<td>Disabled</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>Unemployed</td>
<td>Homemaker</td>
</tr>
<tr>
<td></td>
<td>Mini/midi job</td>
<td>Maternity leave</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Training</td>
</tr>
</tbody>
</table>

Note: Composition of the groups for the sources of income volatility. The definitions of employment status in each country dataset do not match perfectly. Sources: USA: PSID; Germany: SOEP; Denmark: administrative records.
Notes: The dots show the average net household income loss (negative values), defined as the annual percentage change in income, weighted by the share of households that experience a drop in income of 25 percent or greater from one year to another. The lines are fitted locally-smoothed polynomials. Involuntary employment disruptions include unemployment, sickness, and disability. Life-course choices include education (student and re-training), various forms of leaves such as family leave, and homemaking. The employment status of the household is based on the status of the household head. For details see Table A.2.1 in the Appendix. Note that in the German case, mini and midi jobs are classified as involuntary employment disruptions. The graphs for the U.S. and Germany use survey sampling weights; the graphs for Denmark are based on the entire population. Sources: PSID (USA), SOEP (Germany), and administrative records (Denmark).
Figure A.2.3: Average Standard Deviation of Income Losses, by Income Quintile

(a) Low-income households

(b) Middle-income households

(c) High-income households

Notes: The dots show the average standard deviation of the annual change in income for all individuals who experience a drop in income from one year to another. The lines are fitted locally-smoothed polynomials. The orange color indicates pre-government gross income and the red color indicated post-government net income. Low-income refers to households in the bottom 20th, middle-income to those between the 40th and 60th percentile, and high-income to households in the top 20th percentile. The plots for the U.S. and Germany are constructed using survey sampling weights; the plots for Denmark are based on the full population. Sources: USA: PSID; Germany: SOEP; Denmark: administrative records.
## A.3 Appendix for Chapter 3

Table A.3.1: The Effect of Unemployment Insurance Generosity on Household Debt by Credit Regime Type

<table>
<thead>
<tr>
<th></th>
<th>Total credit to households (% of GDP)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>UI generosity</td>
<td>-0.24***</td>
<td>-0.16**</td>
</tr>
<tr>
<td></td>
<td>(0.05)</td>
<td>(0.07)</td>
</tr>
<tr>
<td>Credit regime: restrictive</td>
<td>0.01</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td></td>
</tr>
<tr>
<td>Credit regime: permissive</td>
<td>0.14***</td>
<td>-0.16*</td>
</tr>
<tr>
<td></td>
<td>(0.05)</td>
<td>(0.09)</td>
</tr>
<tr>
<td>UI generosity × Credit regime: restrictive</td>
<td>0.04</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.06)</td>
<td></td>
</tr>
<tr>
<td>UI generosity × Credit regime: permissive</td>
<td>-0.16*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.09)</td>
<td></td>
</tr>
</tbody>
</table>

| DV mean | 0.53 | 0.55 |
| Controls | ✓    | ✓    |
| Unit fixed effects | ✓    | ✓    |
| Year fixed effects | ✓    | ✓    |
| Observations | 591  | 523  |
| R²          | 0.90 | 0.91 |
| Adjusted R² | 0.88 | 0.89 |

*Note:* Results from fixed effect regression models. Robust standard errors are clustered at the country level and reported in parentheses. *p<0.1; **p<0.05; ***p<0.01.
A.4 Appendix for Chapter 4

Figure A.4.1: Marginal Effect of Unemployment on Debt-to-Income Ratio by Size of Financial Gaps, Debt Normalized by Prior Income

Notes: The plot shows event-year marginal effect coefficients for debt-income ratios relative to the year prior to unemployment estimated from equation 4.3, estimated separately for both income loss groups. The shaded areas are 95% confidence intervals based on robust standard errors clustered at the household level. The financial gap is measured as the size of the income loss and calculated as the change in household disposable income from $t = -1$ to $t = 0$. The model is based on a balanced sample of households whose household head has his or her first unemployment between 1992-2007 such that individuals are observed during the entire period between five years before and after unemployment.
Figure A.4.2: Distribution of Maximum Unemployment Insurance Benefits Across U.S. States, 1996-2012

Note: The box plot shows the distribution of per-person UI benefit generosity (in log) across states for the period of 1996 to 2012. Source: Own calculations based on U.S. Department of Labor, Employment and Training Administration, Office of Unemployment Insurance.
Table A.4.1: US: Marginal Effects of Layoff on Unsecured Debt

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Total unsecured debt (log)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>Layoff</td>
<td>0.16***</td>
</tr>
<tr>
<td></td>
<td>(0.07)</td>
</tr>
<tr>
<td>Total household income (log)</td>
<td>0.16***</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
</tr>
<tr>
<td>Liquid savings (log)</td>
<td>0.05***</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
</tr>
<tr>
<td>Education: BA</td>
<td>0.89***</td>
</tr>
<tr>
<td></td>
<td>(0.20)</td>
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<tr>
<td>Education: College</td>
<td>0.77***</td>
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<tr>
<td></td>
<td>(0.27)</td>
</tr>
<tr>
<td>Education: High School</td>
<td>0.27*</td>
</tr>
<tr>
<td></td>
<td>(0.16)</td>
</tr>
<tr>
<td>Education: MA</td>
<td>0.85**</td>
</tr>
<tr>
<td></td>
<td>(0.42)</td>
</tr>
<tr>
<td>Education: Some College</td>
<td>0.44**</td>
</tr>
<tr>
<td></td>
<td>(0.21)</td>
</tr>
<tr>
<td>Age</td>
<td>0.07</td>
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<td></td>
<td>(0.07)</td>
</tr>
<tr>
<td>Age square</td>
<td>-0.10</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
</tr>
<tr>
<td>Number of children</td>
<td>-0.00</td>
</tr>
<tr>
<td></td>
<td>(0.04)</td>
</tr>
<tr>
<td>Family: male head</td>
<td>-0.09</td>
</tr>
<tr>
<td></td>
<td>(0.18)</td>
</tr>
<tr>
<td>Married couple</td>
<td>0.95***</td>
</tr>
<tr>
<td></td>
<td>(0.12)</td>
</tr>
<tr>
<td>Non-family: female head</td>
<td>-0.51***</td>
</tr>
<tr>
<td></td>
<td>(0.14)</td>
</tr>
<tr>
<td>Non-family: male head</td>
<td>-0.80***</td>
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<tr>
<td></td>
<td>(0.17)</td>
</tr>
<tr>
<td>Renter</td>
<td>-0.23***</td>
</tr>
<tr>
<td></td>
<td>(0.07)</td>
</tr>
<tr>
<td>Race: Asian</td>
<td>0.69</td>
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<tr>
<td></td>
<td>(0.87)</td>
</tr>
<tr>
<td>Race: Black</td>
<td>0.06</td>
</tr>
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<td></td>
<td>(0.86)</td>
</tr>
<tr>
<td>Race: Native American</td>
<td>-0.31</td>
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<tr>
<td></td>
<td>(0.72)</td>
</tr>
<tr>
<td>Layoff × Total household income (log)</td>
<td>-0.08**</td>
</tr>
<tr>
<td></td>
<td>(0.04)</td>
</tr>
<tr>
<td>Layoff × Liquid savings (log)</td>
<td>-0.08**</td>
</tr>
<tr>
<td></td>
<td>(0.04)</td>
</tr>
</tbody>
</table>

Note: Marginal effects of layoff on unsecured debt (log) relative to individuals who are full-time employed. The results are based on equation 4.5. Robust standard errors clustered at the household level. *p<0.1; **p<0.05; ***p<0.01.
Table A.4.2: US: Marginal Effects of Unemployment on Unsecured Debt, by UI Generosity

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<tr>
<th>Dependent variable:</th>
<th>Unsecured debt (log)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>3.95* (2.09)</td>
</tr>
<tr>
<td>Maximum UI benefits (log)</td>
<td>0.10 (0.24)</td>
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<tr>
<td>Liquid savings (log)</td>
<td>0.04*** (0.01)</td>
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<tr>
<td>Education: BA</td>
<td>0.99** (0.40)</td>
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<tr>
<td>Education: College</td>
<td>0.95*** (0.36)</td>
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<tr>
<td>Education: High School</td>
<td>0.26 (0.27)</td>
</tr>
<tr>
<td>Education: MA</td>
<td>1.06* (0.54)</td>
</tr>
<tr>
<td>Education: Some College</td>
<td>0.44 (0.37)</td>
</tr>
<tr>
<td>Age</td>
<td>0.10** (0.07)</td>
</tr>
<tr>
<td>Age square</td>
<td>-0.00** (0.09)</td>
</tr>
<tr>
<td>Number of children</td>
<td>0.04 (0.04)</td>
</tr>
<tr>
<td>Family: male head</td>
<td>0.20 (0.26)</td>
</tr>
<tr>
<td>Married couple</td>
<td>1.24*** (0.15)</td>
</tr>
<tr>
<td>Non-family: female head</td>
<td>-0.48*** (0.10)</td>
</tr>
<tr>
<td>Non-family: male head</td>
<td>-0.52*** (0.10)</td>
</tr>
<tr>
<td>Renter</td>
<td>-0.12 (0.08)</td>
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<tr>
<td>Race: Asian</td>
<td>1.43 (1.32)</td>
</tr>
<tr>
<td>Race: Black</td>
<td>1.55 (1.13)</td>
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<tr>
<td>Race: Native American</td>
<td>0.22 (0.63)</td>
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<tr>
<td>Income Q1</td>
<td>-0.38*** (0.07)</td>
</tr>
<tr>
<td>Income Q2</td>
<td>-0.22*** (0.05)</td>
</tr>
<tr>
<td>Income Q4</td>
<td>0.19*** (0.08)</td>
</tr>
<tr>
<td>Income Q5</td>
<td>0.26*** (0.10)</td>
</tr>
<tr>
<td>Unemployed x Maximum UI benefits (log)</td>
<td>-0.38* (0.21)</td>
</tr>
<tr>
<td>Unit fixed effects</td>
<td>✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>Year fixed effects</td>
<td>✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>Linear time effects</td>
<td>✗ ✗ ✗ ✓</td>
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<td>R²</td>
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<td>Adjusted R²</td>
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Note: The models are based on equation 4.6. Robust standard errors are clustered at the state level and reported in parentheses. Column 1 is the baseline model without controls, column 2 adds a set of unit-level controls, and column 3 additionally adds income quintile dummies. Column 4 adds state-level linear time trends. *p<0.1; **p<0.05; ***p<0.01.
Table A.4.3: Marginal Effects of Working Less Than 35h/week on Unsecured Debt

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<td>(3)</td>
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<tr>
<td>Work less than 35h</td>
<td>0.30***</td>
<td>0.31***</td>
<td>0.32***</td>
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<tr>
<td>(log)</td>
<td>(0.05)</td>
<td>(0.05)</td>
<td>(0.05)</td>
</tr>
<tr>
<td>Total household income (log)</td>
<td></td>
<td></td>
<td>0.11***</td>
</tr>
<tr>
<td>(log)</td>
<td></td>
<td></td>
<td>(0.03)</td>
</tr>
<tr>
<td>Total liquid savings (log)</td>
<td>0.05***</td>
<td>0.05***</td>
<td></td>
</tr>
<tr>
<td>(log)</td>
<td>(0.01)</td>
<td>(0.01)</td>
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<tr>
<td>Education: BA</td>
<td>0.99*</td>
<td>0.98*</td>
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<tr>
<td>(log)</td>
<td>(0.58)</td>
<td>(0.58)</td>
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<tr>
<td>Education: College</td>
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<td>(log)</td>
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<td>(0.57)</td>
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<tr>
<td>Education: High School</td>
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<td>0.33</td>
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</tr>
<tr>
<td>(log)</td>
<td>(0.40)</td>
<td>(0.40)</td>
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<tr>
<td>Education: MA</td>
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<tr>
<td>(log)</td>
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<td>0.36</td>
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<tr>
<td>(log)</td>
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<td>(0.53)</td>
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<tr>
<td>Age</td>
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<td>0.13</td>
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<tr>
<td>(0.10)</td>
<td>(0.10)</td>
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<td></td>
</tr>
<tr>
<td>Age square</td>
<td>-0.00</td>
<td>-0.00</td>
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</tr>
<tr>
<td>(0.00)</td>
<td>(0.00)</td>
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</tr>
<tr>
<td>Number of children</td>
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<td>(0.06)</td>
<td>(0.06)</td>
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<tr>
<td>Family: male head</td>
<td>0.08</td>
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<td>(0.35)</td>
<td>(0.35)</td>
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<td>Married couple</td>
<td>1.19***</td>
<td>1.16***</td>
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<td>(0.20)</td>
<td>(0.20)</td>
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</tr>
<tr>
<td>Non-family: female head</td>
<td>-0.50***</td>
<td>-0.48**</td>
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<td>(0.19)</td>
<td>(0.19)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-family: male head</td>
<td>-0.63**</td>
<td>-0.63**</td>
<td></td>
</tr>
<tr>
<td>(0.31)</td>
<td>(0.31)</td>
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<td></td>
</tr>
<tr>
<td>Renter</td>
<td>-0.12</td>
<td>-0.11</td>
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<tr>
<td>(0.10)</td>
<td>(0.10)</td>
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</tr>
<tr>
<td>Race: Asian</td>
<td>1.74</td>
<td>1.78</td>
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<td>(1.43)</td>
<td>(1.40)</td>
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<tr>
<td>Race: Black</td>
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<td>0.88</td>
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<tr>
<td>(1.12)</td>
<td>(1.12)</td>
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<td></td>
</tr>
<tr>
<td>Race: Native American</td>
<td>-0.45</td>
<td>-0.45</td>
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</tr>
<tr>
<td>(1.35)</td>
<td>(1.34)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Limited set of controls | ✗       | ✓   | ✗   |
Full set of controls    | ✗       | ✗   | ✓   |
Unit fixed effects      | ✓   | ✓   | ✓   |
Year fixed effects      | ✓   | ✓   | ✓   |
Observations            | 185,978 | 185,494 | 185,468 |
R²                      | 0.72    | 0.72  | 0.72  |
Adjusted R²             | 0.45    | 0.46  | 0.46  |

Robust standard errors are clustered at the state level and reported in parentheses. Column 1 is the baseline model without controls, column 2 adds a set of unit-level controls, and column 3 additionally adds income as a control. *p<0.1; **p<0.05; ***p<0.01.

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Table A.4.4: Germany: Marginal Effects of Employment Type on Unsecured Debt

<table>
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<th></th>
<th>Dependent variable:</th>
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</thead>
<tbody>
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<td></td>
<td>Unsecured debt (log)</td>
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<td>(2)</td>
</tr>
<tr>
<td>Unemployed</td>
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<td>0.32</td>
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</tr>
<tr>
<td></td>
<td>(0.21)</td>
<td>(0.21)</td>
<td></td>
</tr>
<tr>
<td>Employed part-time (15-35h/week)</td>
<td>0.17</td>
<td>0.21</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.26)</td>
<td>(0.26)</td>
<td></td>
</tr>
<tr>
<td>Employed part-time (&lt;15h/week)</td>
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<td>0.12</td>
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<tr>
<td></td>
<td>(0.26)</td>
<td>(0.26)</td>
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</tr>
<tr>
<td>Employed: sometimes</td>
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<td>-0.03</td>
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</tr>
<tr>
<td></td>
<td>(0.34)</td>
<td>(0.34)</td>
<td></td>
</tr>
<tr>
<td>Total household income (log)</td>
<td>0.12***</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(0.04)</td>
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</tr>
<tr>
<td>Total household savings (log)</td>
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</tr>
<tr>
<td></td>
<td>(0.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education: other</td>
<td>0.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.34)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education: public servant</td>
<td>0.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.43)</td>
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<td></td>
</tr>
<tr>
<td>Education: university</td>
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<td>(0.36)</td>
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<td></td>
</tr>
<tr>
<td>Education: vocational training</td>
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<td></td>
<td>(0.28)</td>
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<tr>
<td>Number of people in household</td>
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<td>(0.06)</td>
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<tr>
<td>Homeowner</td>
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<tr>
<td></td>
<td>(0.25)</td>
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<td></td>
</tr>
<tr>
<td>Dummy East</td>
<td>0.27</td>
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</tr>
<tr>
<td></td>
<td>(0.58)</td>
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<td></td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>Unit fixed effects</td>
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<td>✓</td>
<td></td>
</tr>
<tr>
<td>Year fixed effects</td>
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<td>✓</td>
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<td>11,466</td>
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<td>0.57</td>
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<tr>
<td>Adjusted R²</td>
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<td>0.48</td>
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</tr>
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Note: Results from a fixed effects model based on equation 4.7. Robust standard errors clustered at the household level. The results are based on five multiple-imputed datasets. *p<0.1; **p<0.05; ***p<0.01.
Table A.4.5: Germany: Marginal Effects of Unemployment on Unsecured Debt

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</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>0.36</td>
<td>0.39</td>
<td>0.36</td>
</tr>
<tr>
<td></td>
<td>(0.26)</td>
<td>(0.26)</td>
<td>(1.85)</td>
</tr>
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<td>Household savings (log)</td>
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<td>-0.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.00)</td>
<td>(0.00)</td>
<td></td>
</tr>
<tr>
<td>Education: other</td>
<td>0.40</td>
<td>0.28</td>
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<td></td>
<td>(0.52)</td>
<td>(0.53)</td>
<td></td>
</tr>
<tr>
<td>Education: public servant</td>
<td>1.23*</td>
<td>1.12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.68)</td>
<td>(0.69)</td>
<td></td>
</tr>
<tr>
<td>Education: university</td>
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<td>0.45</td>
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<tr>
<td></td>
<td>(0.61)</td>
<td>(0.60)</td>
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</tr>
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<td>Education: vocational training</td>
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<td>-0.09</td>
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</tr>
<tr>
<td></td>
<td>(0.42)</td>
<td>(0.42)</td>
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</tr>
<tr>
<td>Number of HH members</td>
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<td>0.07</td>
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</tr>
<tr>
<td></td>
<td>(0.10)</td>
<td>(0.10)</td>
<td></td>
</tr>
<tr>
<td>Dummy East</td>
<td>0.08</td>
<td>0.07</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.39)</td>
<td>(0.39)</td>
<td></td>
</tr>
<tr>
<td>Homeowner</td>
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<td>0.59</td>
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<tr>
<td></td>
<td>(0.72)</td>
<td>(0.73)</td>
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</tr>
<tr>
<td>Household income (log)</td>
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<td>0.25</td>
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<td>(0.16)</td>
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<td>Unemployed × Household income (log)</td>
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<td></td>
<td>(0.18)</td>
</tr>
</tbody>
</table>

|                  | X        | ✓        | ✓     |
| Controls         |          |          |       |
| Unit fixed effects | ✓        | ✓        | ✓     |
| Year fixed effects | ✓        | ✓        | ✓     |
| Observations     | 6,102    | 6,102    | 6,102 |
| $R^2$            | 0.61     | 0.61     | 0.61  |
| Adjusted $R^2$   | 0.51     | 0.51     | 0.51  |

Note: Results from a fixed effects model based on equation 4.8. Robust standard errors clustered at the household level. The omitted baseline are households where the household head is full-time employed. *p<0.1; **p<0.05; ***p<0.01.
Table A.4.6: Germany: Predicted Probabilities of Using Overdraft Facilities by Employment Status and Income Group

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Use of Overdraft Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployed</td>
<td>-1.31</td>
</tr>
<tr>
<td></td>
<td>(1.05)</td>
</tr>
<tr>
<td>Income Q1</td>
<td>-0.69</td>
</tr>
<tr>
<td></td>
<td>(0.67)</td>
</tr>
<tr>
<td>Income Q2</td>
<td>-0.12</td>
</tr>
<tr>
<td></td>
<td>(0.39)</td>
</tr>
<tr>
<td>Income Q4</td>
<td>-0.60**</td>
</tr>
<tr>
<td></td>
<td>(0.25)</td>
</tr>
<tr>
<td>Income Q5</td>
<td>-0.72***</td>
</tr>
<tr>
<td></td>
<td>(0.27)</td>
</tr>
<tr>
<td>Education: other</td>
<td>0.48**</td>
</tr>
<tr>
<td></td>
<td>(0.21)</td>
</tr>
<tr>
<td>Education: public servant</td>
<td>-0.76</td>
</tr>
<tr>
<td></td>
<td>(0.68)</td>
</tr>
<tr>
<td>Education: university</td>
<td>-0.10</td>
</tr>
<tr>
<td></td>
<td>(0.72)</td>
</tr>
<tr>
<td>Education: vocational training</td>
<td>-1.41**</td>
</tr>
<tr>
<td></td>
<td>(0.57)</td>
</tr>
<tr>
<td>Total household savings (log)</td>
<td>-0.56</td>
</tr>
<tr>
<td></td>
<td>(0.47)</td>
</tr>
<tr>
<td>Total household income (log)</td>
<td>-0.08</td>
</tr>
<tr>
<td></td>
<td>(0.37)</td>
</tr>
<tr>
<td>Number of children</td>
<td>-0.23</td>
</tr>
<tr>
<td></td>
<td>(0.36)</td>
</tr>
<tr>
<td>Dummy East</td>
<td>-0.29</td>
</tr>
<tr>
<td></td>
<td>(0.32)</td>
</tr>
<tr>
<td>Married</td>
<td>0.59</td>
</tr>
<tr>
<td></td>
<td>(0.36)</td>
</tr>
<tr>
<td>Number of people in household</td>
<td>-0.58**</td>
</tr>
<tr>
<td></td>
<td>(0.27)</td>
</tr>
<tr>
<td>Homeowner</td>
<td>15.59</td>
</tr>
<tr>
<td></td>
<td>($49.94)</td>
</tr>
<tr>
<td>Unemployed × Income Q1</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>(1.76)</td>
</tr>
<tr>
<td>Unemployed × Income Q2</td>
<td>-0.77</td>
</tr>
<tr>
<td></td>
<td>(1.25)</td>
</tr>
<tr>
<td>Unemployed × Income Q4</td>
<td>-2.22</td>
</tr>
<tr>
<td></td>
<td>(2.04)</td>
</tr>
<tr>
<td>Unemployed × Income Q5</td>
<td>-1.38</td>
</tr>
<tr>
<td></td>
<td>(1.01)</td>
</tr>
</tbody>
</table>

Observations: 2,004
Log Likelihood: -700.05
Akaike Inf. Crit.: 1,444.10
Bayesian Inf. Crit.: 1,567.37

Note: Results from a mixed effects logistic regression based on equation 4.9. The dependent variable is a dummy which takes the value of one if respondents say the use their overdraft facility “often or always” and zero otherwise. The omitted baseline are households where in the middle income quintile. *p<0.1; **p<0.05; ***p<0.01.
Table A.4.7: Germany: Predicted Probabilities of Using Overdraft Facilities by Employment Status and Savings Group

<table>
<thead>
<tr>
<th>Dependent variable: Use of Overdraft Facilities</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployed</td>
<td>0.95 (1.13)</td>
</tr>
<tr>
<td>Income Q1</td>
<td>-0.19 (0.78)</td>
</tr>
<tr>
<td>Income Q2</td>
<td>-1.36 (1.07)</td>
</tr>
<tr>
<td>Income Q4</td>
<td>-2.30* (1.29)</td>
</tr>
<tr>
<td>Income Q5</td>
<td>-0.25 (2.02)</td>
</tr>
<tr>
<td>Education: other</td>
<td>0.36 (2.07)</td>
</tr>
<tr>
<td>Education: public servant</td>
<td>-0.75 (1.71)</td>
</tr>
<tr>
<td>Education: university</td>
<td>-0.02 (1.46)</td>
</tr>
<tr>
<td>Education: vocational training</td>
<td>-0.42 (0.47)</td>
</tr>
<tr>
<td>Total household savings (log)</td>
<td>0.72 (0.58)</td>
</tr>
<tr>
<td>Number of children</td>
<td>0.76 (1.13)</td>
</tr>
<tr>
<td>Dummy East</td>
<td>0.12 (0.97)</td>
</tr>
<tr>
<td>Married</td>
<td>-0.21 (0.50)</td>
</tr>
<tr>
<td>Number of people in household</td>
<td>-1.41* (0.73)</td>
</tr>
<tr>
<td>Homeowner</td>
<td>0.44 (1.47)</td>
</tr>
<tr>
<td>Unemployed x Savings bottom tertile</td>
<td>-1.36 (2.29)</td>
</tr>
<tr>
<td>Unemployed x Savings 2nd tertile</td>
<td>-1.23 (2.76)</td>
</tr>
<tr>
<td>Unemployed x Savings top tertile</td>
<td>0.06 (5.82)</td>
</tr>
<tr>
<td>Observations</td>
<td>2,004</td>
</tr>
<tr>
<td>Log Likelihood</td>
<td>-726.33</td>
</tr>
<tr>
<td>Akaike Inf. Crit.</td>
<td>1,492.67</td>
</tr>
<tr>
<td>Bayesian Inf. Crit.</td>
<td>1,604.73</td>
</tr>
</tbody>
</table>

Note: Results from a mixed effects logistic regression based on equation 4.9. The dependent variable is a dummy which takes the value of one if respondents say the use their overdraft facility "often or always" and zero otherwise. The omitted baseline are households with no savings. *p<0.1; **p<0.05; ***p<0.01.
Table A.4.8: Germany: Marginal Effects of Cuts in Unemployment Benefits on Unsecured Debt

<table>
<thead>
<tr>
<th></th>
<th>Dependent variable:</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unsecured debt (log)</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>1.71***</td>
<td>1.89***</td>
<td>1.84***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.62)</td>
<td>(0.66)</td>
<td>(0.66)</td>
<td></td>
</tr>
<tr>
<td>Total household income</td>
<td>0.21*</td>
<td>0.21**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(log)</td>
<td>(0.11)</td>
<td>(0.11)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total household savings</td>
<td>-0.00</td>
<td>-0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(log)</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education: other</td>
<td>0.01</td>
<td>-0.11</td>
<td>-0.06</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.58)</td>
<td>(0.59)</td>
<td>(0.58)</td>
<td></td>
</tr>
<tr>
<td>Education: public servant</td>
<td>0.72</td>
<td>0.67</td>
<td>0.76</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.69)</td>
<td>(1.05)</td>
<td>(1.06)</td>
<td></td>
</tr>
<tr>
<td>Education: university</td>
<td>0.02</td>
<td>0.13</td>
<td>0.19</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.54)</td>
<td>(0.72)</td>
<td>(0.72)</td>
<td></td>
</tr>
<tr>
<td>Education: vocational</td>
<td>-0.24</td>
<td>-0.19</td>
<td>-0.16</td>
<td></td>
</tr>
<tr>
<td>training</td>
<td>(0.42)</td>
<td>(0.49)</td>
<td>(0.49)</td>
<td></td>
</tr>
<tr>
<td>Age squared</td>
<td>-0.00</td>
<td>-0.00</td>
<td>-0.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td></td>
</tr>
<tr>
<td>Number of children</td>
<td>0.18</td>
<td>0.03</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.25)</td>
<td>(0.28)</td>
<td>(0.28)</td>
<td></td>
</tr>
<tr>
<td>Dummy East</td>
<td>0.21</td>
<td>0.43</td>
<td>0.43</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.64)</td>
<td>(0.63)</td>
<td>(0.64)</td>
<td></td>
</tr>
<tr>
<td>Number of people in</td>
<td>-0.16</td>
<td>-0.02</td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td>household</td>
<td>(0.15)</td>
<td>(0.20)</td>
<td>(0.20)</td>
<td></td>
</tr>
<tr>
<td>Homeowner</td>
<td>0.14</td>
<td>0.54</td>
<td>0.54</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.43)</td>
<td>(0.50)</td>
<td>(0.50)</td>
<td></td>
</tr>
<tr>
<td>Unemployed x Period</td>
<td>-1.19**</td>
<td>-1.26**</td>
<td>-1.26**</td>
<td></td>
</tr>
<tr>
<td>post</td>
<td>(0.58)</td>
<td>(0.61)</td>
<td>(0.62)</td>
<td></td>
</tr>
</tbody>
</table>

|                          |         |         |         |
| Full set of controls     | ✓       | ✓       | ✓       |
| Restricted set of controls| x      | x       | ✓       |
| Unit fixed effects       | ✓       | ✓       | ✓       |
| Year fixed effects       | ✓       | ✓       | ✓       |
| Observations             | 5,342   | 5,342   | 5,342   |
| R²                       | 0.64    | 0.64    | 0.64    |
| Adjusted R²              | 0.53    | 0.54    | 0.54    |

Note: Results from a fixed effects model based on equation 4.10. Robust standard errors are clustered at the household level. In columns 2 and 3, the data is adjusted for imbalances between employed and unemployed respondents using entropy balance based on age, education, number of children living in household, number of people in household, and marital status. Column (3) excludes income and savings as covariates because they may introduce post-treatment bias. The results remain virtually unchanged. The lower-order term Period is a time-invariant indicator of reform status and is not identified in the presence of year fixed effects. *p<0.1; **p<0.05; ***p<0.01.
Table A.4.9: Denmark: Marginal Effects of the Danish Home Equity Reform on Total Household Debt Among Savings-Constrained Individuals, by Employment Status

<table>
<thead>
<tr>
<th>Dependent variable: Total household debt (log)</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployed</td>
<td>-0.45***</td>
<td>-0.33***</td>
<td>-0.41***</td>
<td>0.05***</td>
<td>-0.08***</td>
<td>-0.20***</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Savings constrained × Periodpost</td>
<td>0.84***</td>
<td>0.80***</td>
<td>0.84***</td>
<td>1.07***</td>
<td>1.03***</td>
<td>1.05***</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Savings constrained × Unemployed</td>
<td>-0.42***</td>
<td>-0.43***</td>
<td>-0.41***</td>
<td>-0.37***</td>
<td>-0.38***</td>
<td>-0.34***</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Periodpost × Unemployed</td>
<td>0.09***</td>
<td>0.19***</td>
<td>0.21***</td>
<td>-0.14***</td>
<td>-0.04*</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Savings constrained × Periodpost × Unemployed</td>
<td>0.78***</td>
<td>0.73***</td>
<td>0.74***</td>
<td>0.62***</td>
<td>0.58***</td>
<td>0.58***</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
</tbody>
</table>

Controls
- Unit and year fixed effects: ✓
- ZIP code fixed effects: ✓
- Birth year fixed effects: ✓
- Education fixed effects: ✓

Observations: 16,762,242
R²: 0.67, 0.71, 0.74, 0.71, 0.74, 0.74
Adjusted R²: 0.61, 0.65, 0.65, 0.66, 0.69, 0.69

Note: Results from a fixed effects model based on equation 4.11. Robust standard errors clustered at the household level. The lower-order terms S_{ij}, Period_{post} are time-invariant and not identified due to the presence of year fixed effects. Column 1 is the baseline unit-and-year fixed effects model without covariates, column 2 adds a set of control variables, and column 3 adds a set of additional fixed effects. The models in columns 4 through 6 replicate the same pattern, but the data is adjusted for imbalances between employed and unemployed respondents using entropy balance based on birth year, education (five levels), ZIP code, family type, number of children, and of the gender of the household head. The lower-order terms Period_{post} and Savings constrained are time-invariant and not identified in the presence of year fixed effects. *p<0.1; **p<0.05; ***p<0.01.
### Table A.5.1: Marginal Effects of Different Life-Course Stages on Household Debt

<table>
<thead>
<tr>
<th></th>
<th>Dependent variable:</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unsecured debt (log)</td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Leave of absence</td>
<td>-0.31***</td>
<td>(0.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternity leave</td>
<td>0.43***</td>
<td>(0.05)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td></td>
<td></td>
<td>-0.11***</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Income Q2</td>
<td>-0.23***</td>
<td>(0.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income Q3</td>
<td>-0.42***</td>
<td>(0.01)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income Q4</td>
<td>-0.77***</td>
<td>(0.01)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income Q5</td>
<td>-1.06***</td>
<td>(0.01)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leave x Income Q2</td>
<td>0.26***</td>
<td>(0.04)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leave x Income Q3</td>
<td>0.38***</td>
<td>(0.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leave x Income Q4</td>
<td>0.50***</td>
<td>(0.04)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leave x Income Q5</td>
<td>0.55***</td>
<td>(0.04)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternity x Income Q2</td>
<td></td>
<td></td>
<td>0.32***</td>
<td>(0.06)</td>
</tr>
<tr>
<td>Maternity x Income Q3</td>
<td></td>
<td></td>
<td>0.18***</td>
<td>(0.06)</td>
</tr>
<tr>
<td>Maternity x Income Q4</td>
<td></td>
<td></td>
<td>0.10</td>
<td>(0.07)</td>
</tr>
<tr>
<td>Maternity x Income Q5</td>
<td></td>
<td></td>
<td>-0.45***</td>
<td>(0.10)</td>
</tr>
<tr>
<td>Student x Income Q2</td>
<td></td>
<td></td>
<td></td>
<td>-0.44***</td>
</tr>
<tr>
<td>Student x Income Q3</td>
<td></td>
<td></td>
<td></td>
<td>-0.62***</td>
</tr>
<tr>
<td>Student x Income Q4</td>
<td></td>
<td></td>
<td></td>
<td>-0.56***</td>
</tr>
<tr>
<td>Student x Income Q5</td>
<td></td>
<td></td>
<td></td>
<td>0.13***</td>
</tr>
<tr>
<td>Controls</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Unit FE</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Year FE</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Birth-year FE</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Observations</td>
<td>26,585,895</td>
<td>26,486,508</td>
<td>28,627,432</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.65</td>
<td>0.65</td>
<td>0.66</td>
<td></td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.60</td>
<td>0.60</td>
<td>0.61</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Marginal effects of layoff on unsecured debt (log) relative to individuals who are full-time employed. The results are based on equation 5.12. Robust standard errors clustered at the household level. *p<0.1; **p<0.05; ***p<0.01.
Table A.5.2: Marginal Effects of Childbirth and Unpaid Absence on Unsecured Debt

<table>
<thead>
<tr>
<th>Dependent variable: Unsecured debt (log)</th>
<th>male householder</th>
<th>female householder</th>
<th>married couple</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth period</td>
<td>-1.21**</td>
<td>-1.24***</td>
<td>-0.19</td>
</tr>
<tr>
<td></td>
<td>(0.59)</td>
<td>(0.44)</td>
<td>(0.16)</td>
</tr>
<tr>
<td>Unpaid absence</td>
<td>0.60**</td>
<td>0.26**</td>
<td>0.25***</td>
</tr>
<tr>
<td></td>
<td>(0.25)</td>
<td>(0.12)</td>
<td>(0.07)</td>
</tr>
<tr>
<td>HH income Q1</td>
<td>-0.25</td>
<td>-0.59***</td>
<td>-0.18</td>
</tr>
<tr>
<td></td>
<td>(0.28)</td>
<td>(0.13)</td>
<td>(0.11)</td>
</tr>
<tr>
<td>HH income Q2</td>
<td>-0.36*</td>
<td>-0.35***</td>
<td>-0.14**</td>
</tr>
<tr>
<td></td>
<td>(0.19)</td>
<td>(0.11)</td>
<td>(0.07)</td>
</tr>
<tr>
<td>HH income Q4</td>
<td>0.39*</td>
<td>0.32***</td>
<td>0.17***</td>
</tr>
<tr>
<td></td>
<td>(0.22)</td>
<td>(0.12)</td>
<td>(0.06)</td>
</tr>
<tr>
<td>HH income Q5</td>
<td>0.67**</td>
<td>0.38**</td>
<td>0.25***</td>
</tr>
<tr>
<td></td>
<td>(0.29)</td>
<td>(0.17)</td>
<td>(0.07)</td>
</tr>
<tr>
<td>Liquid savings (log)</td>
<td>0.06***</td>
<td>0.06***</td>
<td>0.03***</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Education: BA</td>
<td>0.92</td>
<td>0.50</td>
<td>1.28***</td>
</tr>
<tr>
<td></td>
<td>(0.87)</td>
<td>(0.56)</td>
<td>(0.35)</td>
</tr>
<tr>
<td>Education: College</td>
<td>0.25</td>
<td>0.32</td>
<td>0.88***</td>
</tr>
<tr>
<td></td>
<td>(0.88)</td>
<td>(0.46)</td>
<td>(0.32)</td>
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<tr>
<td>Education: High School</td>
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<td>0.35</td>
<td>0.40***</td>
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<tr>
<td></td>
<td>(0.51)</td>
<td>(0.25)</td>
<td>(0.19)</td>
</tr>
<tr>
<td>Education: MA</td>
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<td>-0.04</td>
<td>1.41***</td>
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<tr>
<td></td>
<td>(1.61)</td>
<td>(0.85)</td>
<td>(0.47)</td>
</tr>
<tr>
<td>Education: Some College</td>
<td>0.82</td>
<td>0.49</td>
<td>0.77***</td>
</tr>
<tr>
<td></td>
<td>(0.74)</td>
<td>(0.34)</td>
<td>(0.23)</td>
</tr>
<tr>
<td>Age</td>
<td>0.09</td>
<td>0.05</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>(0.22)</td>
<td>(0.13)</td>
<td>(0.09)</td>
</tr>
<tr>
<td>Age square</td>
<td>-0.00</td>
<td>-0.00*</td>
<td>-0.00</td>
</tr>
<tr>
<td></td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
</tr>
<tr>
<td>Number of children</td>
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<tr>
<td></td>
<td>(0.19)</td>
<td>(0.08)</td>
<td>(0.05)</td>
</tr>
<tr>
<td>Renter</td>
<td>-0.61</td>
<td>-0.05</td>
<td>-0.43***</td>
</tr>
<tr>
<td></td>
<td>(0.38)</td>
<td>(0.18)</td>
<td>(0.12)</td>
</tr>
<tr>
<td>Race: Asian</td>
<td>2.16</td>
<td>3.10</td>
<td>1.90</td>
</tr>
<tr>
<td></td>
<td>(3.57)</td>
<td>(2.32)</td>
<td>(1.33)</td>
</tr>
<tr>
<td>Race: Black</td>
<td>-2.96</td>
<td>1.35</td>
<td>1.80</td>
</tr>
<tr>
<td></td>
<td>(1.82)</td>
<td>(0.92)</td>
<td>(1.39)</td>
</tr>
<tr>
<td>Race: Native American</td>
<td>-4.67***</td>
<td>4.45*</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>(1.71)</td>
<td>(2.45)</td>
<td>(0.48)</td>
</tr>
<tr>
<td>Birth period</td>
<td>0.15</td>
<td>2.26***</td>
<td>6.26</td>
</tr>
<tr>
<td>x unpaid absence</td>
<td>(1.35)</td>
<td>(0.80)</td>
<td>(0.37)</td>
</tr>
</tbody>
</table>

Note: Results from three separate regression models estimating the marginal effects of paying for childcare on unsecured debt (log); sample split by household type. Robust standard errors clustered at the household level. Model (3) is estimated for women only. *p<0.1; **p<0.05; ***p<0.01.
Table A.5.3: Fragmented Life-Course Trajectories and Unsecured Debt

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Debt to pay off (dummy)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>full-time employed</td>
</tr>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>Months in employment status</td>
<td>1.01</td>
</tr>
<tr>
<td></td>
<td>(1.00)</td>
</tr>
<tr>
<td>Household income (log)</td>
<td>1.45</td>
</tr>
<tr>
<td></td>
<td>(1.03)</td>
</tr>
<tr>
<td>Savings (log)</td>
<td>0.84</td>
</tr>
<tr>
<td></td>
<td>(1.01)</td>
</tr>
<tr>
<td>Age</td>
<td>1.02</td>
</tr>
<tr>
<td></td>
<td>(1.01)</td>
</tr>
<tr>
<td>Age squared</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>(1.00)</td>
</tr>
<tr>
<td>Number of children in household</td>
<td>1.03</td>
</tr>
<tr>
<td></td>
<td>(1.01)</td>
</tr>
<tr>
<td>Education: basic vocational</td>
<td>1.08</td>
</tr>
<tr>
<td></td>
<td>(1.08)</td>
</tr>
<tr>
<td>Education: higher tertiary</td>
<td>1.05</td>
</tr>
<tr>
<td></td>
<td>(1.14)</td>
</tr>
<tr>
<td>Education: intermed. vocational</td>
<td>1.10</td>
</tr>
<tr>
<td></td>
<td>(1.10)</td>
</tr>
<tr>
<td>Education: lower tertiary</td>
<td>1.08</td>
</tr>
<tr>
<td></td>
<td>(1.14)</td>
</tr>
<tr>
<td>Education: high-school</td>
<td>0.97</td>
</tr>
<tr>
<td></td>
<td>(1.12)</td>
</tr>
<tr>
<td>Single-household</td>
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</tr>
<tr>
<td></td>
<td>(1.03)</td>
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<tr>
<td>Homeowner</td>
<td>0.88</td>
</tr>
<tr>
<td></td>
<td>(1.03)</td>
</tr>
<tr>
<td>Dummy East</td>
<td>1.27</td>
</tr>
<tr>
<td></td>
<td>(1.08)</td>
</tr>
<tr>
<td>Observations</td>
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</tr>
<tr>
<td>R²</td>
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</tr>
<tr>
<td>Max. Possible R²</td>
<td>0.59</td>
</tr>
<tr>
<td>Log Likelihood</td>
<td>-61,907.75</td>
</tr>
<tr>
<td>Wald Test (df = 14)</td>
<td>616.28***</td>
</tr>
</tbody>
</table>

Note: Each column displays the main coefficients from a fixed effect regression model that estimates the effect of the number of months in each life-course status in the previous year on unsecured debt relative to those who have zero months in that status (omitted baseline). Models with months in each status as continuous variables show the similar results. Robust standard errors clustered at the household level. *p<0.1; **p<0.05; ***p<0.01.
Table A.5.4: Odds Ratios of Childcare Cost on Probability of Carrying Debt

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Repay loans</th>
<th></th>
<th>Repay new loans</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>full sample</td>
<td>renters</td>
<td>homeowners</td>
<td>full sample</td>
<td>renters</td>
<td>homeowners</td>
<td></td>
</tr>
<tr>
<td>Pay fee for daycare</td>
<td>0.92 (1.18)</td>
<td>1.00 (1.00)</td>
<td>1.00 (1.00)</td>
<td>0.66 (1.35)</td>
<td>1.00 (1.00)</td>
<td>1.00 (1.00)</td>
<td>1.00 (1.00)</td>
</tr>
<tr>
<td>Amount paid for daycare</td>
<td>1.70 (1.34)</td>
<td>3.99 (2.67)</td>
<td>2.68 (3.91)</td>
<td>8.38 (8.44)</td>
<td>2.40 (1.71)</td>
<td>4.04 (8.98)</td>
<td>15.09 (16.00)</td>
</tr>
<tr>
<td>Household net income (log)</td>
<td>0.78 (1.11)</td>
<td>0.67 (1.35)</td>
<td>0.52 (1.72)</td>
<td>0.80 (1.48)</td>
<td>0.84 (1.20)</td>
<td>0.62 (1.60)</td>
<td>0.39 (2.43)</td>
</tr>
<tr>
<td>Savings (log)</td>
<td>1.00 (1.20)</td>
<td>0.83 (1.76)</td>
<td>0.95 (2.12)</td>
<td>0.40 (3.33)</td>
<td>1.01 (1.45)</td>
<td>1.70 (4.71)</td>
<td>7.70 (9.66)</td>
</tr>
<tr>
<td>Age</td>
<td>1.00 (1.00)</td>
<td>1.00 (1.00)</td>
<td>1.00 (1.00)</td>
<td>1.00 (1.00)</td>
<td>1.00 (1.00)</td>
<td>1.00 (1.00)</td>
<td>1.00 (1.00)</td>
</tr>
<tr>
<td>Age squared</td>
<td>1.00 (1.00)</td>
<td>1.00 (1.00)</td>
<td>1.01 (1.01)</td>
<td>1.01 (1.02)</td>
<td>0.99 (1.02)</td>
<td>0.97 (1.03)</td>
<td>0.97 (1.03)</td>
</tr>
<tr>
<td>Number of children in household</td>
<td>1.00 (1.17)</td>
<td>0.57 (1.69)</td>
<td>0.55 (2.47)</td>
<td>1.15 (2.23)</td>
<td>0.82 (1.37)</td>
<td>0.34 (3.41)</td>
<td>0.64 (12.74)</td>
</tr>
<tr>
<td>Single-household</td>
<td>1.00 (1.37)</td>
<td>0.67 (2.14)</td>
<td>0.46 (2.94)</td>
<td>2.22 (6.74)</td>
<td>0.83 (1.76)</td>
<td>0.20 (5.42)</td>
<td>0.23 (12.76)</td>
</tr>
<tr>
<td>Homeowner</td>
<td>0.84 (1.29)</td>
<td>1.09 (1.95)</td>
<td>0.90 (3.95)</td>
<td>0.50 (1.71)</td>
<td>0.00 (1.00)</td>
<td>2.21 (5.76)</td>
<td>0.00 (0.00)</td>
</tr>
</tbody>
</table>

| Observations | 3,926 | 1,130 | 531 | 599 | 3,806 | 1,177 | 528 | 589 |
| R² | 0.00 | 0.01 | 0.01 | 0.01 | 0.00 | 0.01 | 0.01 | 0.01 |
| Max. Possible R² | 0.25 | 0.13 | 0.12 | 0.11 | 0.08 | 0.04 | 0.04 | 0.01 |
| Log Likelihood | -545.95 | -74.40 | -32.19 | -33.00 | -147.50 | -19.62 | -9.63 | -7.88 |

Note: Odds ratios based on conditional maximum likelihood estimates from conditional logistic regressions with unit strata. Models (1) through (4) use the indicator whether household repay loans and interest, models (5) through (8) whether household repay new loans and interest. *p<0.1; **p<0.05; ***p<0.01.
A.6 Appendix for Chapter 6

Table A.6.1: Detailed Survey Information

<table>
<thead>
<tr>
<th>Country</th>
<th>Completed Interviews</th>
<th>Response Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>2198</td>
<td>58</td>
</tr>
<tr>
<td>Denmark</td>
<td>2099</td>
<td>53</td>
</tr>
<tr>
<td>England</td>
<td>2001</td>
<td>53</td>
</tr>
<tr>
<td>France</td>
<td>2269</td>
<td>73</td>
</tr>
<tr>
<td>Germany</td>
<td>2019</td>
<td>78</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2003</td>
<td>58</td>
</tr>
<tr>
<td>Spain</td>
<td>2276</td>
<td>82</td>
</tr>
<tr>
<td>Sweden</td>
<td>2288</td>
<td>65</td>
</tr>
<tr>
<td>USA</td>
<td>5012</td>
<td>80</td>
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</table>

Table A.6.2: Question Wording and Scores

<table>
<thead>
<tr>
<th>Question wording</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>The government should do more to reduce differences in income levels</td>
<td>Five-point scale: strongly agree (-2) / disagree (2)</td>
</tr>
<tr>
<td>The government should do more to help people who become unemployed</td>
<td>Five-point scale: strongly agree (-2) / disagree (2)</td>
</tr>
<tr>
<td>The government should do more to help people who become sick or disabled or in other ways lose the ability to work</td>
<td>Five-point scale: strongly agree (-2) / disagree (2)</td>
</tr>
<tr>
<td>The government should do more to alleviate the consequences for people hurt by globalization</td>
<td>Five-point scale: strongly agree (-2) / disagree (2)</td>
</tr>
<tr>
<td>If your household were to experience (a period of) financial hardship tomorrow, how easy would it be for you to borrow money from a financial institution?</td>
<td>Five-point scale: very difficult (-2) / very easy (2)</td>
</tr>
<tr>
<td>What is the probability that you will experience a period of unemployment next year? Please pick a number between 0 and 100, where 0 means that the event certainly does not occur and 100 means that it occurs for sure.</td>
<td>100-point probability scale</td>
</tr>
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</table>
Table A.6.3: Factor Loadings for Economic Insecurity Index

<table>
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<tr>
<th>Economic Insecurity Index</th>
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<th>PC1.1</th>
<th>PC1.2</th>
<th>com</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worried: job situation</td>
<td>0.84</td>
<td>0.70</td>
<td>0.30</td>
<td>1</td>
</tr>
<tr>
<td>Worried: maintaining income</td>
<td>0.89</td>
<td>0.79</td>
<td>0.21</td>
<td>1</td>
</tr>
<tr>
<td>Worried: health insurance coverage</td>
<td>0.81</td>
<td>0.66</td>
<td>0.34</td>
<td>1</td>
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<tr>
<td>Worried: enough money for retirement</td>
<td>0.83</td>
<td>0.68</td>
<td>0.32</td>
<td>1</td>
</tr>
<tr>
<td>Worried: getting out of debt</td>
<td>0.79</td>
<td>0.63</td>
<td>0.37</td>
<td>1</td>
</tr>
</tbody>
</table>

SS loadings 3.47
Cronbach’s alpha 0.89

Figure A.6.1: Balance Plot Comparing Groups with Different Ease of Access to Credit

Notes: This balance plot compares respondents how have very easy access to credit to those who have not. The unadjusted difference is the difference in means of the raw data. Entropy balance achieve perfect balance on these covariates.
Figure A.6.2: Balance Plot Comparing Groups with Different Worries about Current Job Situation

Notes: This balance plot compares respondents who have are concerned about their current job situation with those who are not. The unadjusted difference is the difference in means of the raw data. Entropy balance achieve perfect balance on these covariates.
Table A.6.4: Effect of Access to Credit on Economic Insecurity

<table>
<thead>
<tr>
<th></th>
<th>Credit card</th>
<th>Student loans</th>
<th>Economic Insecurity Index</th>
<th>Debt from family/friends</th>
<th>Personal loans</th>
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<tbody>
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<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
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<tr>
<td>Debt-to-asset ratio</td>
<td>0.06***</td>
<td>0.04***</td>
<td>0.02***</td>
<td>0.49***</td>
<td>0.01***</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.05)</td>
<td>(0.00)</td>
</tr>
<tr>
<td>Age</td>
<td>-0.06***</td>
<td>-0.00***</td>
<td>-0.00***</td>
<td>-0.00***</td>
<td>-0.00***</td>
</tr>
<tr>
<td></td>
<td>(0.06)</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
</tr>
<tr>
<td>Male</td>
<td>-0.06***</td>
<td>-0.06***</td>
<td>-0.03**</td>
<td>-0.06***</td>
<td>-0.06***</td>
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<tr>
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<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.02)</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Education: college</td>
<td>-0.05</td>
<td>-0.07*</td>
<td>-0.03</td>
<td>-0.04</td>
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<tr>
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<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.06)</td>
<td>(0.04)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>Education: doctorate</td>
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<td>-0.01</td>
<td>0.03</td>
<td>-0.03</td>
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<tr>
<td></td>
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<td>(0.05)</td>
<td>(0.07)</td>
<td>(0.05)</td>
<td>(0.05)</td>
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<tr>
<td>Education: high school</td>
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<td>-0.04</td>
<td>-0.02</td>
<td>-0.02</td>
<td>-0.04</td>
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<tr>
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<td>(0.04)</td>
<td>(0.06)</td>
<td>(0.04)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>Education: no primary educ.</td>
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<td>-0.01</td>
<td>-0.02</td>
<td>0.04</td>
<td>-0.03</td>
</tr>
<tr>
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<td>(0.14)</td>
<td>(0.18)</td>
<td>(0.14)</td>
<td>(0.14)</td>
</tr>
<tr>
<td>Education: postgraduate</td>
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<td>-0.08***</td>
<td>-0.03</td>
<td>-0.06</td>
<td>-0.05</td>
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<tr>
<td></td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.06)</td>
<td>(0.04)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>Education: voc. training</td>
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<td>-0.00</td>
<td>0.02</td>
<td>0.01</td>
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</tr>
<tr>
<td></td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.06)</td>
<td>(0.04)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>Education: voc. training (long)</td>
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<td>-0.02</td>
<td>-0.02</td>
<td>-0.03</td>
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<td>(0.04)</td>
<td>(0.06)</td>
<td>(0.04)</td>
<td>(0.04)</td>
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<tr>
<td>Single with children</td>
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<td>-0.02</td>
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<td>(0.03)</td>
<td>(0.04)</td>
<td>(0.03)</td>
<td>(0.03)</td>
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<tr>
<td>Couple no children</td>
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<td>-0.07**</td>
<td>-0.08**</td>
<td>-0.07***</td>
<td>-0.07**</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.04)</td>
<td>(0.03)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>Couple with children</td>
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<td>0.01</td>
<td>0.01</td>
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<td>(0.03)</td>
<td>(0.04)</td>
<td>(0.03)</td>
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</tr>
<tr>
<td>Number chld. at home</td>
<td>0.03***</td>
<td>0.03***</td>
<td>0.03**</td>
<td>0.03***</td>
<td>0.03***</td>
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<tr>
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<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Net household income (log)</td>
<td>-0.05***</td>
<td>-0.05***</td>
<td>-0.05**</td>
<td>-0.04***</td>
<td>-0.05***</td>
</tr>
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<td>(0.00)</td>
<td>(0.01)</td>
<td>(0.00)</td>
<td>(0.00)</td>
</tr>
<tr>
<td>Savings-constrained</td>
<td>0.12***</td>
<td>0.15***</td>
<td>0.16**</td>
<td>0.14***</td>
<td>0.14***</td>
</tr>
<tr>
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<td>(0.01)</td>
<td>(0.02)</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Homeowner</td>
<td>-0.06***</td>
<td>-0.05***</td>
<td>-0.06**</td>
<td>-0.06***</td>
<td>-0.07***</td>
</tr>
<tr>
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<td>(0.01)</td>
<td>(0.03)</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Risk taking</td>
<td>0.02***</td>
<td>0.02***</td>
<td>0.02***</td>
<td>0.02***</td>
<td>0.02***</td>
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<tr>
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<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
</tr>
</tbody>
</table>

Country FE        ✓       ✓       ✓       ✓       ✓       ✓
Observations      7,945    7,801    4,472   7,799    7,818
R²                 0.23     0.23     0.23     0.24     0.23
Adjusted R²       0.22     0.23     0.23     0.23     0.23

Note: Marginal effects from country fixed effect regression models. *p<0.1; **p<0.05; ***p<0.01.
Table A.6.5: Marginal Effects of Family Status on Economic Worries

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Worried about overall econ. security</th>
<th>Worried about maintaining income</th>
<th>Worried about getting out of debt</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Single with children</td>
<td>0.30**</td>
<td>0.22***</td>
<td>0.27**</td>
</tr>
<tr>
<td></td>
<td>(0.12)</td>
<td>(0.08)</td>
<td>(0.11)</td>
</tr>
<tr>
<td>Couple no children</td>
<td>-0.17</td>
<td>-0.14</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>(0.11)</td>
<td>(0.12)</td>
<td>(0.12)</td>
</tr>
<tr>
<td>Couple with children</td>
<td>0.35**</td>
<td>0.26***</td>
<td>0.54***</td>
</tr>
<tr>
<td></td>
<td>(0.15)</td>
<td>(0.10)</td>
<td>(0.17)</td>
</tr>
<tr>
<td>Age</td>
<td>-0.00</td>
<td>-0.00</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
</tr>
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<td>Male</td>
<td>-0.39***</td>
<td>-0.29</td>
<td>-0.18**</td>
</tr>
<tr>
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<td>(0.11)</td>
<td>(0.19)</td>
<td>(0.07)</td>
</tr>
<tr>
<td>Education: college</td>
<td>-0.36***</td>
<td>-0.59***</td>
<td>0.28*</td>
</tr>
<tr>
<td></td>
<td>(0.09)</td>
<td>(0.12)</td>
<td>(0.17)</td>
</tr>
<tr>
<td>Education: doctorate</td>
<td>-0.02</td>
<td>-0.10</td>
<td>0.04</td>
</tr>
<tr>
<td></td>
<td>(0.17)</td>
<td>(0.16)</td>
<td>(0.11)</td>
</tr>
<tr>
<td>Education: high school</td>
<td>-0.38***</td>
<td>-0.55***</td>
<td>-0.34***</td>
</tr>
<tr>
<td></td>
<td>(0.08)</td>
<td>(0.12)</td>
<td>(0.10)</td>
</tr>
<tr>
<td>Education: no primary educ.</td>
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<td>-0.22</td>
<td>0.76</td>
</tr>
<tr>
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<td>(0.53)</td>
<td>(1.03)</td>
<td>(1.23)</td>
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<tr>
<td>Education: postgraduate</td>
<td>-0.38**</td>
<td>-0.57***</td>
<td>-0.42</td>
</tr>
<tr>
<td></td>
<td>(0.16)</td>
<td>(0.21)</td>
<td>(0.30)</td>
</tr>
<tr>
<td>Education: voc. training</td>
<td>-0.07</td>
<td>-0.27</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>(0.18)</td>
<td>(0.23)</td>
<td>(0.20)</td>
</tr>
<tr>
<td>Education: voc. training (long)</td>
<td>-0.26**</td>
<td>-0.42**</td>
<td>-0.10</td>
</tr>
<tr>
<td></td>
<td>(0.13)</td>
<td>(0.20)</td>
<td>(0.19)</td>
</tr>
<tr>
<td>Number child. at home</td>
<td>0.10**</td>
<td>0.12*</td>
<td>0.23***</td>
</tr>
<tr>
<td></td>
<td>(0.04)</td>
<td>(0.07)</td>
<td>(0.05)</td>
</tr>
<tr>
<td>Net household income (log)</td>
<td>-0.27***</td>
<td>-0.25***</td>
<td>-0.27***</td>
</tr>
<tr>
<td></td>
<td>(0.04)</td>
<td>(0.03)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>Savings-constrained</td>
<td>0.91***</td>
<td>0.69***</td>
<td>1.32***</td>
</tr>
<tr>
<td></td>
<td>(0.13)</td>
<td>(0.10)</td>
<td>(0.08)</td>
</tr>
<tr>
<td>Homeowner</td>
<td>-0.56***</td>
<td>-0.36***</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>(0.10)</td>
<td>(0.05)</td>
<td>(0.09)</td>
</tr>
<tr>
<td>Risk taking</td>
<td>0.06**</td>
<td>0.07***</td>
<td>0.15***</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td>(0.03)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Country FE</td>
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<td>✓</td>
<td>✓</td>
</tr>
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<td>Observations</td>
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<td>12,155</td>
</tr>
<tr>
<td>R²</td>
<td>0.24</td>
<td>0.19</td>
<td>0.17</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.24</td>
<td>0.19</td>
<td>0.17</td>
</tr>
</tbody>
</table>

Note: Estimates from country-fixed effect regression models. All results are relative to single households with no children (omitted baseline category). *p<0.1; **p<0.05; ***p<0.01.
Table A.6.6: Effect of Easier Access to Credit on Subjective Economic Insecurity

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Economic Insecurity Index</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of credit access (dummy)</td>
<td>-0.64***</td>
<td>-0.59***</td>
<td>-0.59***</td>
<td>-0.57***</td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Ease of credit access (cont.)</td>
<td>(-0.15***)</td>
<td>(0.00)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-0.00***</td>
<td>-0.00***</td>
<td>-0.00***</td>
<td>-0.00***</td>
<td>(0.00)</td>
<td>(0.00)</td>
</tr>
<tr>
<td>Male</td>
<td>0.01</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Education: primary</td>
<td>-0.09</td>
<td>-0.09</td>
<td>-0.09</td>
<td>-0.26*</td>
<td>(0.21)</td>
<td>(0.21)</td>
</tr>
<tr>
<td>Education: high school</td>
<td>-0.09</td>
<td>-0.08</td>
<td>-0.08</td>
<td>-0.24*</td>
<td>(0.20)</td>
<td>(0.20)</td>
</tr>
<tr>
<td>Education: voc. training</td>
<td>-0.00</td>
<td>0.01</td>
<td>0.01</td>
<td>-0.19</td>
<td>(0.20)</td>
<td>(0.20)</td>
</tr>
<tr>
<td>Education: voc. training (long)</td>
<td>-0.07</td>
<td>-0.06</td>
<td>-0.06</td>
<td>-0.20</td>
<td>(0.20)</td>
<td>(0.20)</td>
</tr>
<tr>
<td>Education: college</td>
<td>-0.02</td>
<td>-0.01</td>
<td>-0.01</td>
<td>-0.20</td>
<td>(0.20)</td>
<td>(0.20)</td>
</tr>
<tr>
<td>Education: postgraduate</td>
<td>-0.04</td>
<td>-0.04</td>
<td>-0.04</td>
<td>-0.24*</td>
<td>(0.20)</td>
<td>(0.20)</td>
</tr>
<tr>
<td>Education: doctorate</td>
<td>-0.02</td>
<td>-0.02</td>
<td>-0.02</td>
<td>-0.04</td>
<td>(0.20)</td>
<td>(0.20)</td>
</tr>
<tr>
<td>Single no children</td>
<td>0.01</td>
<td>0.02</td>
<td>0.02</td>
<td>0.07*</td>
<td>(0.04)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>Single with children</td>
<td>0.00</td>
<td>-0.06</td>
<td>-0.00</td>
<td>0.03</td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Couple with children</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.03</td>
<td>(0.03)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>Number of children at home</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.05***</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Net household income (log)</td>
<td>-0.04***</td>
<td>-0.05***</td>
<td>-0.05***</td>
<td>-0.02***</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Liquid assets (log)</td>
<td>-0.02***</td>
<td>-0.02***</td>
<td>-0.02***</td>
<td>-0.01***</td>
<td>(0.00)</td>
<td>(0.00)</td>
</tr>
<tr>
<td>Homeowner</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>-0.01</td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Risk taking</td>
<td>0.01***</td>
<td>0.01***</td>
<td>0.02***</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
</tr>
</tbody>
</table>

**Note:** The models in columns 1 through 4 are based on the entropy-balance dataset. For comparison, the model in column 5 uses the unbalanced raw data. Marginal effects from country fixed effect regression models. *p<0.1; **p<0.05; ***p<0.01.
Table A.6.7: Effect of Easier Access to Credit on Preferences for Unemployment Insurance by Subjective Risk of Unemployment

<table>
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<th>Dependent variable:</th>
<th>Gvt. should do more to help the unemployed</th>
</tr>
</thead>
<tbody>
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<tr>
<td>Probability of unemployment next year</td>
<td><strong>0.48</strong>*</td>
</tr>
<tr>
<td>Ease of credit access (binary)</td>
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</tr>
<tr>
<td>Ease of credit access (cont.)</td>
<td>-0.00*</td>
</tr>
<tr>
<td>Age</td>
<td>0.03</td>
</tr>
<tr>
<td>Male</td>
<td>1.03*</td>
</tr>
<tr>
<td>Education: primary</td>
<td>0.97*</td>
</tr>
<tr>
<td>Education: high school</td>
<td>0.77</td>
</tr>
<tr>
<td>Education: voc. training</td>
<td>0.67</td>
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<td>Education: postgraduate</td>
<td>0.74</td>
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<tr>
<td>Education: doctorate</td>
<td>0.99*</td>
</tr>
<tr>
<td>Single no children</td>
<td>-0.14</td>
</tr>
<tr>
<td>Single with children</td>
<td>-0.17***</td>
</tr>
<tr>
<td>Couple with children</td>
<td>-0.06</td>
</tr>
<tr>
<td>Number of children at home</td>
<td>0.13***</td>
</tr>
<tr>
<td>Net household income (log)</td>
<td>-0.08***</td>
</tr>
<tr>
<td>Savings-constrained</td>
<td>-0.04</td>
</tr>
<tr>
<td>Homeowner</td>
<td>-0.12**</td>
</tr>
<tr>
<td>Risk taking</td>
<td>0.02**</td>
</tr>
<tr>
<td>Probability unemployed × Easy access to credit</td>
<td><strong>-0.27</strong></td>
</tr>
<tr>
<td>Probability unemployed × Easy access to credit</td>
<td>(0.13)</td>
</tr>
<tr>
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</tr>
<tr>
<td>Adjusted R²</td>
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</tr>
</tbody>
</table>

*Note: Marginal effects from country fixed effect regression models. Models 1 through 3 are based on an entropy-balanced dataset; model 4 used the unweighted dataset. *p<0.1; **p<0.05; ***p<0.01.*
Table A.6.8: Effect of Debt Leverage on Support for Social Policies by Economic Insecurity

<table>
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<th>Gvt. should do more to reduce income differences</th>
</tr>
</thead>
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<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>(3)</td>
<td>(4)</td>
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<td>(6)</td>
</tr>
<tr>
<td></td>
<td>(7)</td>
<td>(8)</td>
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<tr>
<td>Mortgage debt leverage</td>
<td>-0.04**</td>
<td>-0.04**</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Credit card debt leverage</td>
<td>-0.03</td>
<td>-0.12***</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>Worried about job situation (dummy)</td>
<td>0.33***</td>
<td>0.34***</td>
</tr>
<tr>
<td></td>
<td>(0.04)</td>
<td>(0.05)</td>
</tr>
<tr>
<td>Age</td>
<td>0.00**</td>
<td>0.00**</td>
</tr>
<tr>
<td></td>
<td>(0.00)</td>
<td>(0.00)</td>
</tr>
<tr>
<td>Male</td>
<td>-0.01</td>
<td>-0.01</td>
</tr>
<tr>
<td></td>
<td>(0.04)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>Education: college</td>
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<td>0.08</td>
</tr>
<tr>
<td></td>
<td>(0.08)</td>
<td>(0.08)</td>
</tr>
<tr>
<td>Education: doctorate</td>
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<td>0.01</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Education: high school</td>
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<td>0.11</td>
</tr>
<tr>
<td></td>
<td>(0.11)</td>
<td>(0.11)</td>
</tr>
<tr>
<td>Education: no primary educ.</td>
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<td>0.11</td>
</tr>
<tr>
<td></td>
<td>(0.11)</td>
<td>(0.11)</td>
</tr>
<tr>
<td>Education: postgraduate</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>Education: voc. training</td>
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<td>-0.02</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Education: voc. training (long)</td>
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<td>0.19</td>
</tr>
<tr>
<td></td>
<td>(0.20)</td>
<td>(0.19)</td>
</tr>
<tr>
<td>Single with children</td>
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<td>0.02</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Couple no children</td>
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<td>0.06</td>
</tr>
<tr>
<td></td>
<td>(0.06)</td>
<td>(0.06)</td>
</tr>
<tr>
<td>Couple with children</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Number child. at home</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>Risk taking</td>
<td>-0.01</td>
<td>-0.01</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Net household income (log)</td>
<td>0.06</td>
<td>0.06</td>
</tr>
<tr>
<td></td>
<td>(0.06)</td>
<td>(0.06)</td>
</tr>
<tr>
<td>Savings-constrained</td>
<td>-0.05</td>
<td>-0.05</td>
</tr>
<tr>
<td></td>
<td>(0.05)</td>
<td>(0.05)</td>
</tr>
<tr>
<td>Homeowner</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Mortgage debt leverage × Worried about job situation</td>
<td>-0.11</td>
<td>-0.11</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Credit card debt leverage × Worried about job situation</td>
<td>0.18***</td>
<td>0.18***</td>
</tr>
<tr>
<td></td>
<td>(0.05)</td>
<td>(0.05)</td>
</tr>
<tr>
<td>Country FE</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Homeowner only</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Observations</td>
<td>2,663</td>
<td>2,663</td>
</tr>
<tr>
<td>R²</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.09</td>
<td>0.09</td>
</tr>
</tbody>
</table>

Note: Marginal effects from country fixed effect regression models based on entropy-balanced data. *p<0.1; **p<0.05; ***p<0.01.