Labor Arbitrage - Impact of Offshoring in the U.S. Labor Market

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MBA
Indian School of Business, 2012

SUBMITTED TO THE MIT SLOAN SCHOOL OF MANAGEMENT
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF

MASTER OF SCIENCE IN MANAGEMENT STUDIES
AT THE
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

JUNE 2013

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Submitted to the MIT Sloan School of Management on May 10, 2013 in partial fulfillment of the requirements for the degree of Master of Science in Management Studies

Abstract

The rapid growth of offshoring has ignited a contentious debate over its impact on the US labor market. Between 1983 and 2002, the United States economy lost 6 million jobs in manufacturing and income inequality increased sharply [Ebenstein, 2011]. Today due to the falling costs of transportation, coordination and communication this tendency is accelerating affecting both white and blue collar workers. While there many papers that analyze the productivity increase due to offshoring practices [Mitra, 2007], [Global Insight, 2004], [Houseman, 2010], most of them just assume that this improvement is automatically translated into lower prices therefore benefiting consumers. Nevertheless this assumption only holds in price competitive markets, which is not always the case.

In this paper I will challenge the assumption of price competitive markets and argue how offshoring increases within-country income inequality. In addition I will analyze the aggregated effect of offshoring in the U.S. economy through both empirical and theoretical approaches.

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Acknowledgments

First and foremost, I would like to thank my thesis supervisor, Professor Nicholas Ashford, for his valuable advice, dedication and support during this year. With his guidance, I have been able to navigate through the vast literature and focus on the key areas for research. His vast knowledge and incredible insights have allowed me to understand and analyze with much more depth such a complex topic as the macroeconomic implications of offshoring.

I am also grateful to the MSMS program, in especially to Julia N. Sargeaunt and Chanh Q. Panh, for their support and encouragement throughout this research process and the whole academic year. Their help and commitment was inspiring and kept me focused until the last minute. I would also like to thank them for organizing thesis workshops during their free time, these meetings helped me regain focus and improve my writing style. I would also like to thank all of the MSMS 2012 students for their support.

It is difficult to overstate my gratitude to Cristina, my wife, for her tireless assistance and unconditional understanding, her help and support during this year have kept me sane and focused. She has really been my compass and my support during all this time.

Finally, I owe my deepest gratitude to my parents, Rosa Angel and Jorge Malibran, for encouraging me and making it possible to pursue this degree, without their support this amazing learning adventure would not have happened.
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Introduction

Offshoring is the term used to describe the relocation by a company of a business process from one country to another—typically from developed countries to developing ones. The term was originally used in financial economics, since many offshore financial centers are British colonial islands located offshore of the mainland such as Singapore, Hong-Kong and the Caribbean Islands. Today the term offshoring has extended from its solely financial meaning to the term goods offshoring and more recently services offshoring.

It is important to note that offshoring only implies the relocation of a business process to another country and not contracting out a process to a third party organization, which is the definition of outsourcing. Therefore there can be two types of offshoring practices:

- **Captive Offshoring (Foreign Direct Investment):** production of goods or services effected or partially or totally transferred abroad within the same group of enterprises. This implies an enterprise transferring some of its activities to its foreign affiliates. These affiliates may already exist or have been created from scratch (greenfield affiliates).

- **Offshore Outsourcing:** partial or total transfer of the production of goods or services abroad to a non-affiliated enterprise.

One of the main drivers of Offshoring has traditionally been cost reduction, mainly due to lower labor cost in developing countries. Companies can immediately reduce their labor cost by laying off employees at home and hiring workers in developing countries were wages are much lower than in the U.S.1. (see figure 1). Taking advantage of wage differentials in different countries to reduce labor costs is denominated “labor arbitrage”.

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1 While average monthly wages do not provide a good estimation of how much a company can save by relocating to a country, it is useful to illustrate the potential of labor arbitrage.
For example a U.S. software company that decides to offshore the development of their new product to India, can reduce their development cost by up to 84 percent as the average developer in India earns six times less than his U.S. peer (see figure 2).

While labor arbitrage is the main driver of offshoring, companies also find other benefits from relocating business process abroad:
- **Access to talent**: for certain professions there is a greater availability of workers overseas. Some countries even promote the specialization of their labor force, very much following the Ricardian precepts of comparative advantage (e.g., China with manufacturing or India with IT enabled services).

The lack of skilled workers in the U.S. is becoming an important driver of offshoring. While the average education of the U.S. workforce is declining, companies require more skilled workers than ever. According to the Bureau of Labor Statistics the U.S. experienced a shortage of 7 million skilled workers and this shortage is expected to rise to 21 million skilled workers by 2020.

- **Reduction of legal exposure**: employing offshore staff reduces legal exposure to employment liabilities and environmental costs. Developing countries, main offshoring destinations, usually have laxer regulations and safety standards, allowing companies to reduce their legal liabilities and compliance costs.

- **Operational flexibility**: offshoring reduces hiring and termination costs, allowing companies to quickly expand and contract their overseas labor force in accordance with business cycles.

- **Lower tax rates**: companies can take advantage of lower corporate tax rates overseas to reduce their tax liabilities. Currently the U.S. is the country with the second highest corporate tax rate in the world, only after United Arab Emirates, and it has consistently had higher corporate tax rates than the rest of OECD countries and main offshoring destinations (see figure 2). Due to this comparatively high corporate tax rate, corporations find incentives to open subsidiaries in low taxed countries and redirect their profits there.
Figure 3: Worldwide corporate tax evolution (Price Waterhouse Coopers)

- **Proximity to clients**: companies may decide go offshore to be closer to their customers. This proximity allows companies to reduce their shipping costs and improve their time response serving overseas markets. The high economic growth and increased purchasing power of these markets are currently driving many offshoring practices.

- **Focus**: by offshoring certain processes, companies can free resources to focus on more valuable activities. This shift towards core competences allows firms to dedicate more time to their strengths, deriving the maximum benefit from their talents.

Offshoring has been a common practice over the past 50 years. As early as 1960, US forms offshored the labor-intensive stages of semiconductor manufacturing to Asia in order to make use of low-cost, unskilled foreign labor [GAO, 2006].

Today the falling costs of transportation are allowing firms to reduce the inherited costs of offshoring production processes. We can see in the Baltic Dry Index\(^2\), how the average price of shipping dry goods has been falling for the last five years (see figure 3). Nevertheless several authors [Pasti, 2011], [McCarthy, 2006] argue that this extraordinarily low transportation costs will not last as energy prices will rise in the near future.

\(^2\) The **Baltic Dry Index (BDI)** is an assessment of the average price to ship raw materials (such as coal, iron ore, cement and grains) on a number of shipping routes (about 50) and by ship size. It is thus an indicator of the cost paid to ship raw materials on global markets and an important component of input costs.
In addition the internet has also reduced coordination and communication costs, allowing firms in rich countries to fragment their production process and offshore an increasing share of the value chain to low-wage countries.

This increase in offshoring practices has been documented by U.S. institutions. In their last research for the U.S. Bureau of Labor Statistics, Forrester Research Inc., projected a total of 3.3 million jobs offshored in 2015 (see figure 4). While it is difficult to estimate the exact numbers, there is no doubt that offshoring has a significant impact on U.S. labor market.
The rapid growth of offshoring practices has ignited a contentious debate over its impact on the U.S. economy and more specifically on the U.S. labor market. This public debate motivated U.S. Congress to take action. On October 22, 2004 the Congress passed the “American Jobs Creation Act of 2004” which contains a provision to encourage profit repatriation back to the U.S. by domestic multinationals. Yet the evidence linking offshore activities with falling domestic demand due to reductions in U.S. purchasing power is still under dispute.

Several studies argue that there are no employment losses due to offshoring activities. Borga in her paper “Trends in Employment at U.S. Multinational companies” [Borga, 2006] and Desai, Foley and Hines in “Foreign Direct Investment and Domestic Economic Activity” [Desai, 2005] argue that expansion of U.S. multinationals abroad stimulates job growth at home. In the same line, Mankiw and Swagel concluded that foreign activity does not crowd out domestic activity [Mankiw, 2006].

A second group of studies reached the opposite conclusion. Brainard and Riker found evidence that foreign affiliate employment substitutes at the margins for U.S. parent employment, and that there is much stronger substitution between workers at affiliates in alternative low wage locations [Brainard, 2001]. Muendler and Becker reach similar conclusions analyzing German manufacturing industry [Muendler, 2006].

These studies and many others focus their research on the macroeconomic implications of offshoring practices. Most of their arguments can be grouped under one of the following categories:

Positive effects of offshoring on employment:

- **Growth in consumers’ disposable incomes:** by offshoring certain business processes companies can reduce their operating costs and improve total factor productivity. In price
competitive markets these costs reductions could be translated into lower prices for final goods and services, therefore increasing consumers’ surplus.

The growth in consumers’ surplus could increase consumption which will have a positive impact on employment if it is mainly oriented towards demand for goods and services produced in that same country. It is important to note that the new jobs created due this increased demand may be completely different to the ones offshored.

- **Improved competitiveness and productivity in enterprises**: the productivity increases due to offshoring help enterprises become more competitive in the global market. Thanks to the earlier mentioned cost reductions companies can decide to either reduce their prices to serve a bigger market, or maintain previous prices and increase their profit margins. Both strategies will have a positive effect on their profits.

The impact on employment will depend greatly on the strategy adopted by the enterprise and the macro-economic environment.

- **Export growth**: offshoring practices could influence exports in two ways. Empirical studies show that foreign investment often complements trade and generates additional exports, and indirectly job creation [Fontagné, 1999]. In addition, the growth in incomes in the offshore countries can create demand for products produced locally, affecting exports and local employment.

- **Control of inflation**: the costs reductions due to offshoring, if transferred to final prices, can contribute to better control of inflation and a reduction of consumer prices. This control over inflation allows flexible monetary policies and lower real interest rates which indirectly stimulate investment and job creation.
Negative effects of offshoring on employment:

- **Fall in real wages**: companies deciding to offshore certain business processes could see their bargaining power increase when negotiating with local workers. Local labor will now need to compete with their overseas counterparts, usually low-wage countries.

- **Deterioration in terms of trade**: offshoring generally helps the economy of a country to the extent that it leads to a fall in the price of imported goods or services. Nevertheless, this could cause a deterioration of that country’s terms of trade, mostly if the exported goods or services are in a similar range.

- **Loss of tax revenues**: companies who decide to offshore operations will stop generating income taxes at home. In addition, companies with operations overseas can move profit to their subsidiaries in countries with lower corporate taxes, through appropriate price transfer strategies.

- **Regional effects**: even when offshoring has a minor effect at national level, it can have serious consequences to particular regions, especially when its activity is the major economic driver of the region. In this case, workers will need to transition to other industries or business with a possible reduction on their real wages [Ebenstein, 2011].

**Evidence from U.S. Manufacturing**

Arguably the most important development for the U.S. manufacturing industry in recent years has been the rapid growth of trade. After being almost flat during the 1990s, the total value of imports and exports of goods and services jumped from roughly 22 percent of GDP to 29 percent in 2010 (see figure 5). Most of this increase is attributable to the growth of nonoil good imports.
This increase of nonoil imports explains why the U.S. manufacturing industry has lost more than six million jobs in the last 30 years (see figure 6). Even after the 2001-2002 recession, manufacturing employment declined by 20 percent, while manufacturing’s share of employment in the economy fell from 14 percent in 1997 to 9 percent in 2010.

Indeed the correlation between the total value of imports of goods and the number manufacturing jobs is highly negative, -0.67. A more detailed analysis, including a simple regression model can be found in Appendix I.
This exodus of manufacturing jobs has also put significant downward wage pressure on U.S. manufacturing workers, who now have to compete in a global market. In a recent study using current population surveys, Avraham Ebenstein et al. calculated that a ten percent point increase in occupation-specific exposure to offshoring in low-wage countries is associated with a 0.73 percent decline in real wages for workers performing routine tasks [Ebenstein, 2011]. In this same study the authors found that when workers relocate from manufacturing to the service sector, they experience a significant wage loss, between two and eleven percent.

While the U.S. manufacturing industry saw steep employment declines and significant downward wage pressure, it also recorded strong output growth (see figure 7). This increase of production was due to notable gains in manufacturing productivity.

![Industrial Production Index Vs. Manufacturing Jobs](image)

**Figure 8: Industrial production Vs. manufacturing jobs (Bureau of Labor Statistics)**

In conclusion, while U.S. manufacturing companies increased their productivity due to offshoring practices, U.S. manufacturing workers were relegated to other industries. This displacement affected their average income, lowering it, between two and eleven percent [Ebenstein, 2011]. The question is who benefits from these productivity increases and how does this displacement of jobs overseas affect the U.S. economy.
Offshoring Productivity Gains

Many studies have demonstrated the positive impact of offshoring practices on companies' productivity and cost savings. Byrne et al. find sizable cross-country differences in the prices of semiconductors with identical specifications [Byrne, 2009]. On average, they found that compared to the U.S., prices were 40 percent lower in China and 25 percent lower in Singapore. Klier and Rubenstein provided evidence that offshored aluminum production in Mexico was 19 percent cheaper than in the U.S. [Klier, 2009]. Nevertheless, it is not clear how these productivity increases are then propagated to the economy.

Productivity Gains and CPI

Many studies [Mitra, 2007], [Global Insight, 2004] assume that the cost reductions due to offshoring processes overseas are mostly translated into lower final product prices. These lower prices affect equally all consumers who will then translate these savings into the economy in the form of new consumption. Nevertheless, this assumption only holds for price competitive markets, less commoditized business find less incentives in propagating this cost reduction into final prices.

Using a hypothetical example; a U.S. phone manufacturer decides to offshore part of its production to China where wages are 50 percent lower. Because most of the demand for the phone is local, the company has to ship back all parts manufactured in China, but even considering the shipping and managing cost the company is able to produce the phones at a 10 percent discount. This cost reduction allows the company to reduce the phone price and at the same time maintain their margins. This decision would benefit all consumers who will see their purchasing power increase and will consume more of other local goods and services, which indirectly will have a positive impact on local employment. But why the company would decide to reduce the price of the phones? The phone manufacturer is a market leader, the brand
provides enough value to de-commoditize the terminal and the pricing has been set to capture the maximum consumer surplus. Under these circumstances the company has few incentives to propagate their cost savings into prices.

While commoditized business, like semiconductors or metal parts, were the pioneers of offshoring practices, today business of all industries are looking to fragment their production process and offshore an increasing share of the value chain. The offshoring of these decommoditized businesses will have little impact on consumers surplus and therefore on employment generation. Even if some of the corporate savings are translated into price declines, this would still not necessarily lead to higher living standards for American households.

A good indicator of the continued lagging of growth in labor compensation behind growth in productivity is the persistent gap between inflation in the prices of goods consumed by American households (CPI) relative to the price of goods produced by American workers (GDPD).

If we analyze both indexes normalized to 1967 price levels, we can see that prices of products produced overseas and consumed by American families are rising more sharply than the GDPD, which is highly correlated with U.S. worker wages, over the last three decades. This means that American households
tend to consume goods whose prices are rising relatively rapidly and therefore they could reduce their living standards if the relative consumption of offshored to local products increases.

Nevertheless it is important to note that it is difficult to measure the real impact of offshoring in the CPI as price declines associated with the shift of production to low-cost countries is only partially captured in price index [Houseman, 2010].

**Productivity Gains and Wages**

Companies could decide to use the productivity gains achieved due to offshoring practices to increase their employees’ salaries. While plausible there is no economic reason for companies to increase their employees’ wages and we definitely see no evidence of it. Indeed the opposite seems to be true. Workers at home will now need to compete at a global scale with their overseas counterparts. This new competition from low wage countries will put downward pressure on local wages.

The same U.S. phone manufacturer who already has offshore part of its production to China reducing their operating cost by 10 percent is now evaluating the possibility of offshoring their quality control process to the same Chinese region. They estimate they can reduce the cost of this process by 10 percent but they fear the lack of skilled labor in the region so they postpone the decision. Several months after their U.S. quality control employees ask for their yearly salary increase but the direction now has fewer incentives to agree to their request. They can just threaten them with offshoring the whole process to China.

In his book offshoring of American jobs Jagdish Bhagwati and Alan Blinder analyze the impact of offshorability on occupation wages. By classifying professions by Blinder’s offshorability index [Blinder,
2008] and running a simple wage regression they found out that workers in the most offshorable jobs were already paying an estimated 13 percent wage penalty, given their educational attainments [Bhagwati, 2009].

Companies may also use these productivity increases to increase their executives' compensation, but again we see no economic reason for it and an analysis from Forbes by Scott de Carlo showed no evidence, at least in the last decade (see figure 9).

Productivity Gains and Company Profits

Companies could use these productivity gains to increase their profits, and either distribute them to their shareholders in the form of dividends or keep them in the form of retained earnings. Companies as profit maximizers would not reinvest the profits acquired due to offshoring practices if their return over investment is not higher than their cost of capital. Therefore using the productivity increases to increase profits would be their option by default.

The phone manufacturer has been able to save up to $100 million in operating costs due to the relocation of its production in China. The CEO is extremely happy and is thinking on how to invest this money. They already evaluated the possibility of reducing the phone price and increasing wages, but the CEO finds no incentives in doing that. They do not need to increase production as
they do not foresee a rise in demand. He thinks about giving an extraordinary dividend to the shareholders of the company but as his CFO does not recommend it because in that case he will need to repatriate these profits and pay an extra 10 percent in taxes, he finally decides to keep this money abroad and leave it in its Chinese subsidiary balance sheet in the form cash equivalents, until it is reinvested in places other than the U.S.

The degree to which productivity gains go to enhanced corporate profits is difficult to estimate. However, there seems to be evidence that companies are using most of their offshoring gains to improve their bottom lines. Reviewing data from the Bureau of Economic Analysis we can see how during the last decade corporate sector profits grew three times faster than personal income (see figure 11). While this entire shift in the income distribution is surely not driven by offshoring, this data is exactly in line with what one would expect if offshoring was already a major feature of the U.S. economy. A more detailed analysis of this tendency can be found in Appendix II.

![Corporate Profit vs. Personal Income Growth](image)

Figure 11: Corporate profit vs. personal income growth (Bureau of Economic Analysis)
Another useful indicator that can be explained by this lack of reinvestment of corporate profits is the amount of cash in companies’ balance sheets. According to JP Morgan during 2012 companies in the S&P 500 have increased their cash balances by 14%, reaching a historic high of $1.5 trillion. While this increase in companies’ cash balances is mainly driven by the economic deceleration and financial instability, it also affected by the use of the profits due to offshoring practices.

Macroeconomic Implications

Many studies have documented the positive impact of offshoring practices on productivity [Mitra, 2007], [Global Insight, 2004], [Houseman, 2010]. However there is little consensus about how these productivity gains affect the U.S. labor market. One of the most cited reports, “Offshoring: Is it a Win-Win Game?” from the McKinsey Global Institute [MGI, 2003] estimated the return over investment of every dollar offshored between 12 and 14 percent (see figure 11).

![Value potential to the U.S. from $1 of spend offshored to India 2002](image_url)

*Estimated based on historical reemployment trends from job loss through trade in the U.S. economy
Source: McKinsey Global Institute

Figure 12: Offshoring value potential accrued to the U.S. (McKinsey Global Institute)
The detailed breakdown of these benefits in McKinsey's report is the following:

- **Fifty-eight cents saved in corporate costs:** Cost savings represent the largest form of economic value captured. A more competitive cost position will lead to higher profitability, increased valuations and help keep U.S. companies highly competitive in the world economy.

- **Five cents due to the U.S. exports to the country where employment has been offshored:** For every dollar of spend offshored, offshore services providers buy an additional goods and services from the U.S. economy, thereby creating exports and extra revenue for the U.S. economy. Providers in low-wage countries require U.S. computers, telecommunications equipment, other hardware and software.

- **Four cents repatriated to U.S. multinationals from the offshored location:** Several providers serving U.S. offshoring market are incorporated in the United States. These companies could repatriate their earnings back to the U.S. Nevertheless companies find few incentives for repatriating offshore profits, mainly due to the high corporate tax rates in the U.S. A good proof of it is the recent debate on tax holidays for corporate profit repatriation and the more than a $1 trillion of offshore earnings sitting in tax havens based on Bloomberg’s estimations.

- **Forty-six cents on average due to the re-employment of U.S. workers whose jobs have been offshored:** As low value-added service is sourced from overseas, U.S. workers previously engaged in providing those services are freed up to take other jobs. McKinsey argues that there is empirical evidence that those services workers find employment more quickly than do manufacturing workers, primary affected by offshoring practices, and therefore the shift towards a service oriented economy generates additional value.
Although, as services offshoring gains relevance the value due to worker re-employment can be significantly reduced.

While MGI report is one of the most referenced analyses it fails to demonstrate how the firm-level benefits due to offshoring practices are translated into net economy-wide gains.

First the numbers of the analysis are most probably biased as it is based on a proprietary data set of self-selected firms that have chosen to offshore some processes specifically because offshoring provided clear economic gains. Second, the report does not recognize that American workers appear as net losers. Only if 80 percent of the savings accrued to U.S. companies is transferred to price reductions, U.S. workers will maintain their purchasing power and as I have discussed in the previous section there is no evidence that such amount of savings to companies is been translated into lower consumption prices.

Furthermore, the cost savings in the form of lower wages, economies of scale and proximity to new markets due to offshoring to low-wage countries is 58 cents, while U.S. workers receive only 47 cents in labor earnings after the process. This implies a total loss of 11 cents for labor earnings for each dollar of production that is offshored, money that represents a redistribution of income away from U.S. workers. This redistribution is in line with the income inequality increase in the U.S. (see figure 12).

Figure 13: Share of income, by income group, growth since 1979 (Congressional Budget Office)
The MGI report also fails to account for the increased imports resulting from offshoring. This is of crucial importance as the U.S. economy needs to finance these new imports by increasing exports, which could be instead employed to promote U.S. consumption or investment. By focusing only on the positive effects of offshoring on companies MGI ignores how the net increase in imports entails hidden costs to the economy derived from transferring domestic resources to finance increased imports.

Like the MGI, many studies ignore the aggregated effect of increased imports due to offshoring practices. This increase in imports does not only affect U.S. balance of payments, like Nobel Laureate Paul Samuelson explained in the Journal of Economic Perspectives, a rapid increase in productivity in offshore countries can result in a reduction of U.S. income through the terms of trade\(^4\) [Samuelson, 2004].

**Offshoring - Fading Advantage?**

There has been some discussion recently about the fading benefits of offshoring. In “The Economist” January 2013 edition there are several articles asserting that companies are rethinking their offshoring strategies due to lower benefits from offshoring practices. The Economist argues that the rising shipping costs and the diminishing wage differentials between the U.S. and main offshoring countries make offshoring practices less appealing and companies are even thinking about reshoring their offshored business processes. Nevertheless there seems to be little evidence of these phenomena.

The Baltic Dry Index, an indicator of the cost paid to ship raw materials on global markets and an important component of input costs, is on a downward trend since 2008 and in the last three years it

\(^4\) The “terms of trade” refer to the prices overseas purchasers pay for U.S. exports relative to the prices U.S. residents pay for imports. If U.S. exports increase prices on foreign markets or U.S. import prices drop, the terms of trade for the U.S. improve, consumers in the U.S. are able to buy more goods given its current income and productivity. If on the other hand U.S. exports decrease or imports become more expensive, U.S. terms of trade deteriorate and therefore U.S. consumers see their purchasing power reduced given current income and productivity.
has dropped by 75 percent (see figure 14). This means that the price of shipping goods across the globe has been decreasing at least during the last three years.

In addition the Economist uses production costs predictions from the 2011 Alix Partners “U.S. Manufacturing-Outsourcing Index” [Alix Partners, 2011]. The index forecasts that the manufacturing in China will be as expensive as manufacturing in the U.S. by 2015 (see figure 15), eliminating any labor arbitrage opportunity. Nevertheless these forecasts assume a 30 percent annual wage rate increase in China, a 5 percent annual appreciation of the Renminbi against the Dollar and a 5 percent annual increase of shipping costs. While plausible it seems unlikely that all these assumptions will hold for the next three years.
Furthermore, even if Chinese manufacturing costs reach U.S. levels by 2015, Axis Partners forecast that production costs in Mexico and India will remain stable at 80 percent U.S. costs, making them still attractive as offshoring destinations. Axis Partners report does not analyze manufacturing costs in even lower wage countries like Vietnam, Indonesia and the Philippines, and even if they have not achieved the scale, efficiency and supply chain yet, they are becoming popular offshoring destinations.

It is important to note that currency exchange rate, the most sensitive variable on Alix Partners model, has been favoring U.S. international competitiveness in the last four years. The U.S. Dollar has depreciated against the Mexican Peso and Chinese Renminbi by 10 percent since 2009 (see figure 16), making U.S. labor more competitive in the international landscape. Nevertheless this devaluation, fueled by an extraordinary low interest rate and three rounds of quantitative easing, it is not likely to continue in the long term.

To exemplify this new reshoring interests, The Economist uses the example of General Electric, who will hire 1,100 IT engineers for its Michigan office to be closer to their business user and to develop new applications for customers more quickly. Nevertheless this decision of hiring local teams to work closely with business users is by no means enough to sustain that General Electric is redefining their offshoring strategy as they still develop half of their IT work by outside providers, most of them located in India.
The Economist also uses the example of General Motors, who decided to reverse its rule of outsourcing 90 percent of its IT work, because “IT has become more pervasive in our business and we now consider it a big source of competitive advantage”. Nevertheless the decision of cancelling several of their outsourcing contracts with Indian providers does not necessarily mean that those jobs are going to be reshored. Indeed many companies are opening their own IT hubs in India, where they can get the advantages of a proprietary technology division, an important technology ecosystem where they can easily find skilled workers and the lower costs associated with a developing country.

Finally the economist uses a survey from Alix Partners, McKinsey and Hackett to show that companies today are less willing to offshore manufacturing processes compared to three years ago (see figure 17). Nevertheless this small change of only three percent together with the punctual reshoring actions may also reflect an attempt to placate public opinion as the offshoring debate is hurting companies image. Furthermore the percentage of companies willing to offshore their production is still higher than the percentage of companies thinking about reshoring.

| Companies' intentions to change manufacturing source, worldwide, % of capacity |
|-----------------------------|-----------------|-----------------|-----------------|-----------------|
| Move between high-cost countries |
| 2009-11 Move between high-cost countries | 26% | 16% | 9% | 6% |
| Offshore                      | 23% | 24% | 19% | Reshore 9% |

Figure 17: Companies’ intentions to change manufacturing source (The Economist)

It is also interesting to note the significant increase of companies thinking about moving their production between low-cost countries. As countries like Vietnam, Philippines or Indonesia start to consolidate as offshoring destinations, we can expect an important shift due to even lower production costs. This competition between low and lower-cost countries will be a interesting phenomenon to follow in the next years.
Conclusion

Over the last years there has been a public debate about the possible effects of increased offshoring practices on the U.S. economy and more specifically on the U.S. labor market. This public debate motivated U.S. Congress to take action. On October 22, 2004 the Congress passed the “American Jobs Creation Act of 2004” which contains a provision to encourage profit repatriation back to the U.S. by domestic multinationals. Yet the evidence linking offshore activities with falling domestic demand is still under dispute.

While most there is significant evidence that offshoring has provided substantial cost savings and improved profits for companies engaging in this practices, it is still not clear how these benefits are propagated into the broader economy. Many authors [Mitra, 2007], [Global Insight, 2004], assume that these cost savings are mostly transformed into lower consumption prices, benefiting equally all consumers and increasing their purchasing power. This theoretical increased purchasing power would have a positive impact in employment if oriented towards demand for local goods and services. Nevertheless a careful analysis of the increasing gap between inflation in the prices of goods consumed by American households (CPI) relative to the price of goods produced by American workers (GDPD) provides evidence against this theory (see figure 9). The fact that prices of products produced overseas and consumed by American families are rising more sharply than the GDPD over the last three decades is also consistent with the data about corporate sector profit growth (see figure 11) as corporate sector profits grew three times faster than personal income.

If productivity gains are not transferred into final lower prices, U.S. workers become net losers in offshoring practices as they see their wages decrease [Ebenstein, 2011]. In addition this decrease on offshorable worker wages will also increase within-country income inequality. This prediction is aligned with Stolper-Samuelson theorem “Trade increases the real return to the factor that is comparatively
abundant in each country and lowers the real return to the other factor” [Samuelson, 1941]. This means that in the U.S., with an abundance of skilled unoffshorable labor, wages of workers should increase relative to unskilled and offshorable workers and inequality should rise with offshoring.

The issue of offshoring requires a careful response from policy makers as its potential benefits are not being equitably distributed among firms and workers. Any policy response must therefore be well informed about the costs and benefits of offshoring practice and a new social contract needs to be put given to U.S. workers to ensure they take advantage of the benefits of offshoring.

Directions for Further Research

Off-shoring is a difficult and complex phenomenon. It produces many and widespread economic impacts, with U.S. employment and workers’ wages being among the most sensitive. One of the main difficulties stems in measuring the extent of offshoring in the U.S. Yet No comprehensive data exist on the number workers who have lost their jobs as a result of the movement of work outside the U.S. The only regularly collected statistics on jobs lost due to offshoring come from the U.S. Bureau of Labor Statistics series on extended mass layoffs. Nevertheless these statistics underestimate the number of jobs lost to offshoring as they exclude small companies and only focus on large layoffs. In addition it is difficult to quantify the benefits accrued to a company from the enhanced competitiveness due to offshoring practices, and how they are distributed among the different parties involved: consumers, shareholders, employees of the firm and retained earnings.

To gain more insight about how this enhanced competitiveness is distributed among consumers, shareholders and employees it would be interesting to select an industry and compare a set of companies that significantly rely on offshoring practices against a set that does not. If we can isolate the productivity gains due to offshoring we can then find out how they are distributed; in the form of lower
product prices which benefits consumers, in the form of higher profits which benefits shareholders, or in the form of higher wages which benefits employees.

Furthermore it would be interesting to analyze the drivers of this behavior to develop the appropriate regulatory and policy responses. Corporate taxes will have a significant influence on companies’ decision of reinvesting abnormal profits obtained abroad, but there may also be other factors that will shape companies’ behavior like market growth, labor availability and wages among others.
Bibliography


Kremer, Michael and Keith Maskin. "Globalization and Inequality," Weatherhead Center for


Appendix I: Imports of Goods and Manufacturing Jobs - Correlation Analysis

Figure 18: Correlation analysis between imports of goods and manufacturing jobs

Table 1: Linear Regression Analysis for number of manufacturing jobs

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-Ratio</th>
<th>Prob&gt;F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>18803886</td>
<td>18803886</td>
<td>9.9983</td>
<td>&lt;0.0001*</td>
</tr>
<tr>
<td>Error</td>
<td>18723099</td>
<td>18723099</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Total</td>
<td>37326895</td>
<td>37326895</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Parameter Estimates:

| Term                  | Estimate  | Std Error | t-Ratio | Prob>|g |
|-----------------------|-----------|-----------|---------|-----|
| Intercept             | 20214.336 | 1853.022  | 10.91   | <0.0001* |
| Total Value of Imports of Goods | -0.003654 | 0.001159 | -3.15   | 0.0102* |
Appendix II: Personal Income vs. Corporate Profit Growth Analysis

We can see how corporate profit growth was very much aligned to personal income growth between 1976 and 2000. Nevertheless since 2002, corporate profits grew at a much higher rate, increasing the gap between wages and corporate profits.

![Personal Income vs. Corporate Profit Growth](image)

To corroborate the reliability of this analysis we need to find if the correlation between personal income and corporate profit is significant. For that purpose I have analyzed the correlation analysis between corporate profit and personal income growth. As wages are stickier than corporate profits I have introduced time delays.

<table>
<thead>
<tr>
<th>Time Delay</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 years</td>
<td>0.019</td>
</tr>
<tr>
<td>1 year</td>
<td><strong>0.418</strong></td>
</tr>
<tr>
<td>2 years</td>
<td>0.227</td>
</tr>
<tr>
<td>3 years</td>
<td>0.090</td>
</tr>
</tbody>
</table>

As we can see the highest correlation appears when we compare corporate profit growth with personal income growth of the next year.
A simple linear regression shows that there is a statistically significant correlation between the two variables.