

SOME REDISTRIBUTIVE AND MACROECONOMIC IMPACTS OF THE NATIONAL  
INDUSTRIAL RECOVERY ACT, 1933-1935

by

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ABSTRACT

The National Industrial Recovery Act, passed on June 16, 1933 as part of the New Deal, was an unprecedented two-year experiment to regulate the United States economy. By promulgating "codes of fair competition" in over four-hundred individual industries, the National Recovery Administration (which administered the legislation) attempted to promote recovery from the Depression and reform of many economic institutions. Economy-wide wage and price controls were imposed in order to promote recovery by increasing the purchasing power of labor, eliminating the downward spiral of prices, and spreading employment to more individuals. The codes were also designed to redistribute income toward the relatively disadvantaged and to promote reforms such as the elimination of child labor and the establishment of legal protection for union organizing and collective bargaining.

This study determines how successful the NIRA

codes were in promoting recovery and redistributing income. First, the impact of the codes on nominal wages and prices is estimated. It will be demonstrated that the codes were responsible for a considerable--and unprecedented--increase in both wages and prices (and that, in the absence of the codes, the enormous prevailing unemployment would have caused a sizeable deflation). Second, the codes are shown to have had significant distributional consequences. Not only were real hourly wages of labor dramatically increased, but also the unskilled workers gained relative to skilled workers and female workers gained relative to males. The codification process is also shown to have favored the larger, well-organized, and more politically powerful firms at the expense of smaller, unorganized firms.

Third, the codes are shown to have nullified the potential expansionary impact of the monetary stimulus after June, 1933. By diminishing the real money supply, reducing real wealth, and increasing real wages, the NIRA codes contributed to unemployment (an impact which was only partially offset by the expansionary consequences of the redistribution of income to labor).

Name and Title of Thesis Supervisor: Peter Temin,  
Professor of Economics

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**CHAPTER I: THE NATIONAL INDUSTRIAL  
RECOVERY ACT: PROVISIONS,  
IMPLEMENTATION, AND  
IMPORTANCE**

## I

## INTRODUCTION

History will probably record the NIRA as the most important and far-reaching legislation ever enacted by the American Congress.<sup>1</sup>

With these words, President Roosevelt signed the National Industrial Recovery Act on June 16, 1933 and so began an unprecedented two-year experiment to regulate the entire United States economy. Between June, 1933 and May, 1935, staggering reforms were promulgated in the quest for economic recovery and reform. Of course other New Deal legislation, also signed during the famous "100 days", had similar objectives.<sup>2</sup> The NIRA promised to extract the United States from the continuing depression thru cooperatative action: promoting cartels to aid industry and promoting unions to aid employees. Within

one year, codes of "fair competition" for four-hundred and fifty individual industries, covering twenty-three million workers were passed. By the time the law was declared unconstitutional on May 27, 1935, over five-hundred and fifty codes had been passed covering almost the entire private, non-agricultural economy.<sup>3</sup>

The codes were designed to fulfill five primary objectives:<sup>4</sup>

- 1) The purchasing power of labor was to be increased, primarily by the institution of economy-wide minimum wage regulations. The minimum wage was set, in many of the individual industry codes, at approximately twelve dollars for forty hours of work.

- 2) Employment was to be spread over more individuals as the result of maximum hours regulations, which restricted the number of hours any employee could work per week (to forty in many of the industry codes).

- 3) "Predator" or "destructive" competition was to be abated by minimum price regulations (including production controls). Prices were to be raised, but not by enough to offset the wage increases. It was hoped that price stabilization, accomplished by cartel-like price and production agreements, would restore confidence in the economy. Over forty-one different types of price regulations were included in the various industry codes,

all designed to insure actual, and not just listed, price control. Some codes set direct minimum prices; others prohibited sales below cost (individual firm or industry average).

4) "Inhumane" working conditions--such as child labor--were to be eliminated.

5) The relatively disadvantaged were to be aided; the codes were to progressively redistribute income (without sacrificing the goals of recovery and reform).

Obviously, the National Industrial Recovery Act was ambitious. This study will analyze the extent to which the promises of recovery, reform, and redistribution were fulfilled.

Chapter I is divided into seven sections. Section II describes the objectives and various sections of the NIRA. Section III outlines the process by which codes were drafted, implemented, and enforced. Section IV analyzes the wage, hours, and other labor provisions of the codes of fair competition passed under the auspices of the NIRA. Section V analyzes the trade-practice provisions of the codes. Section VI reviews both the debate concerning the importance of the NIRA to the course of United States economic history and the alleged bias toward industry of NIRA implementation. Section VII outlines major issues that remain unresolved by previous



histories of the NIRA and lists the major findings of this study.

## II

## OBJECTIVES OF THE NATIONAL INDUSTRIAL RECOVERY ACT

Upon signing the legislation, President Roosevelt emphasized the importance of the NIRA to the future of the United States:

It represents a supreme effort to stabilize for all time the many factors which make for the prosperity of the nation and the preservation of American standards.

Its goal is the assurance of a reasonable profit to industry and living wages for labor, with the elimination of the piratical methods and practices which have not only harassed honest business but also contributed to the ills of labor.<sup>5</sup>

It was the contention of Roosevelt's advisors and Congressional supporters that the continuing economic stagnation was due, at least in part, to the "destructive", "unbridled" or "predatory" competition, as evidenced by a "self-perpetuating" downward spiral of wages and prices. NIRA advocates argued that falling wages and prices led to pessimistic business expectations, and therefore to falling investment, payrolls, employment, and spending. Concomitantly, the economy suffered from "overproduction", with production outpacing consumption.<sup>6</sup>

In such an environment, spokesmen for industry,

labor and government all offered suggestions for curative legislation.<sup>7</sup> Those who represented labor (for example, William Green of the American Federation of Labor, Secretary of Labor Frances Perkins, Senator Robert F. Wagner, John L. Lewis of the United Mine Workers of America, and Sidney Hillman of the Amalgamated Clothing Workers) lobbied for legislation to redistribute income to labor and thereby increase consumption. Labor called for restrictions on the maximum number of hours worked per week per employee (to spread even the original man-hours of employment amongst more individuals) without allowing average weekly compensation to fall (in order to increase general purchasing power). Minimum wages were to be established, also to increase general purchasing power in the economy.

Industrialists (such as Henry Harriman of the U.S. Chamber of Commerce, Gerard Swope and Bernard Baruch) lobbied for industrial self-government--cooperative agreements among industry members (after suspension of the anti-trust laws) to eliminate excessive competition.

The final NIRA legislation represented a compromise: labor received sweeping minimum wage and maximum hours provisions, the elimination of child labor, and most importantly, guarantees to the right to collectively bargain and to organize without interference from employers. In return for these concessions, industry was

exempted from the anti-trust laws and allowed to design codes of behavior that would guarantee their own economic survival.

Recovery depended, therefore, on employers delaying price increases until after labor had received its wage boost; otherwise there would be no reallocation of purchasing power to labor. As the President cautioned:

I am fully aware that wage increases will eventually raise costs, but I ask that management give first consideration to the improvement of operating figures by greatly increased sales to be expected from the rising purchasing power of the public. That is good economics and good business. The aim of this whole effort is to restore our rich domestic market by raising its vast consuming capacity. If we inflate prices as fast and as far as we increase wages, the whole project will be at naught. We cannot hope for the full effect of this plan unless, in the first critical months, and even at the expense of full initial profits, we can defer price increases as long as possible. If we can thus start a strong sound upward spiral of business activity our industries will have little doubt of black ink operations in the last quarter of this year.<sup>8</sup>

It was hoped that by stimulating demand and production, unit costs would fall and vitiate the need to subsequently raise prices. Donald Richberg (general counsel to the National Recovery Administration and later Administrator) explained the Administration's theory:

Naturally part of the increased labor costs would be met by increasing prices, which in the Spring of 1933 were generally at distress levels. But if volume of

output increased, as it should with the re-employment of several million persons, it would not be necessary to increase prices to a corresponding amount; and thereby actual mass purchasing power would be increased.<sup>9</sup>

But the overriding characteristic of the NIRA was the unprecedented encouragement of cooperative control over the economy by labor organizations, trade associations, and government. Just as unique were the sweeping powers granted to the President to approve, and even impose, economic controls over individual industries. Planning, not markets, was to be the key to economic fortune; if for no other reason, the NIRA represented a significant departure from accepted economic practices in the United States.

The specific objectives of the NIRA emphasized recovery and reform thru cooperative action:

It is hereby declared to be the policy of Congress . . . to provide for the general welfare by promoting the organization of industry for the purpose of co-operative action among trade groups, to induce and maintain united action of labor and management under adequate governmental sanctions and supervision, to eliminate unfair competitive practices to promote the fullest possible utilization of the present productive capacity of industry, to avoid undue restriction of production (except as may be temporarily required), to increase the consumption of industrial and agricultural products by increasing purchasing power, to reduce and relieve unemployment, to improve standards of labor, and otherwise to rehabilitate industry and to conserve natural resources.<sup>10</sup>

The legislation was divided into three titles:

1) Title I: Industrial Recovery. This title suspended the antitrust laws and provided for industry members to draft "codes of fair competition", which, when approved by the President, would apply to the entire industry and would be enforceable by law. The President was granted powers to approve or amend drafted codes, and to impose codes on industries which failed to draft their own. The codes covered, for example, pricing and production decisions.

2) Title II: Public Works and Construction Projects. This section authorized spending of over three billion dollars for public works projects.

3) Title III: Amendment to Emergency Relief and Construction Act and Miscellaneous Provisions.

Only the first title, which authorized the industrial codes, will be analyzed in this study.

Title I was divided into ten sections, section 1 of which allowed for the creation of the National Recovery Administration (the agency which was primarily responsible for administering the NIRA).

Section 3a of Title I provided for the drafting of the industrial codes. Trade or industrial associations were to apply to the President for approval of plans to regulate their industries. If the President found the

proposed code promoted the goals of the legislation without, for example, fostering "monopolies," "monopolistic practices," or imposing undue burdens on small business and potential entrants, then he was to approve the code. Section 3b provided that Presidentially-approved codes would be legally binding.

Other sections of Title I granted powers to the President to regulate industry, virtually unilaterally. Besides authorization to enter into voluntary agreements (under which the President's Re-employment Agreement was promulgated). Section 4 of Title I reserved the right of the President to license those firms he determined to be in compliance with the legislation's intended wage and price regulations. Section 5 suspended the antitrust laws.

Section 7a, labor's "Magna Charta", guaranteed legal protection for labor organizations and organizers:

Every code shall contain the conditions:  
 (1) that employees shall have the right to organize and bargain collectively and shall be free from interference by employers in the designation of their representatives or in other concerted activities;  
 (2) that no employee and no one seeking employment shall be required as a condition of employment to join any company union or to refrain from joining or assisting a labor organization of his own choosing; and (3) that employers shall comply with the maximum hours, rates of pay, and other conditions of employment approved or prescribed by the President.<sup>11</sup>

Even if the NIRA had accomplished nothing else, labor's right to collectively bargain and organize without management interference was first recognized (and preserved, after the NIRA was declared unconstitutional, in the National Labor Relations Act (Wagner Act) of 1935).



## III

## DRAFTING, IMPLEMENTING, AND ENFORCING THE NRA CODES

Under the auspices of Section III, over five-hundred codes of industrial self-government were promulgated. Virtually all of the non-agricultural, private (and profit-making) economy was covered.<sup>12</sup> Of course, agricultural workers were covered by other New Deal legislation, the Agricultural Adjustment Act, with its own extensive price controls.

Individual industry codes were the product of time-consuming negotiation between representatives of management (who themselves were often divided in their suggestions), labor, consumers, and the National Recovery Administration (NRA). Delays were unavoidable. In order to expedite implementation, minimum wage and maximum hour regulations, similar to those eventually included in

the industry codes, were instituted under the President's Re-employment Agreement, which was distributed in July of 1933. Employers voluntarily agreed to several wage and employment provisions. The President's Re-employment Agreement became known as the "blanket code," the acceptance of which by an employer was rewarded by the famous Blue Eagle insignia. Though the PRA was voluntarily signed by employers, and legally unenforceable, the pressure of public opinion insured acceptance and compliance. Perhaps even more important for compliance was the fact that signers of the PRA agreed to patronize other signers and federal government purchases were to be restricted to those firms which complied with either an approved code of fair competition or to the PRA. Thus, non-compliers faced an effective economic boycott.

Alexander Sachs, first director of the Research and Planning Division of the National Recovery Administration, presented the Administration argument for the necessity of issuing a blanket code:

Even before the completion of the first code, it was apparent that against the inflation background and the equally if not more important prospective, enormous increases in labor costs under codes, flight from liquidity and inactivity was taking the form of inventory stocking-up, overproduction, and even hoarding of goods. To the prospects of discounting of artificial price advances, unrelated to corresponding advances in consumer demand and artificial overproduction--to beat

the guns of inflation and codification-- was added the differential and inequitable timing of cost offsets to the realized price advances, as industries would serially come up with their draft codes and receive their final codes, with the result that the social-minded would be disadvantaged in their competition for the consumer dollar, let alone the inherent competitive disadvantage that the Act left to interstate as distinguished from intrastate business.<sup>13</sup>

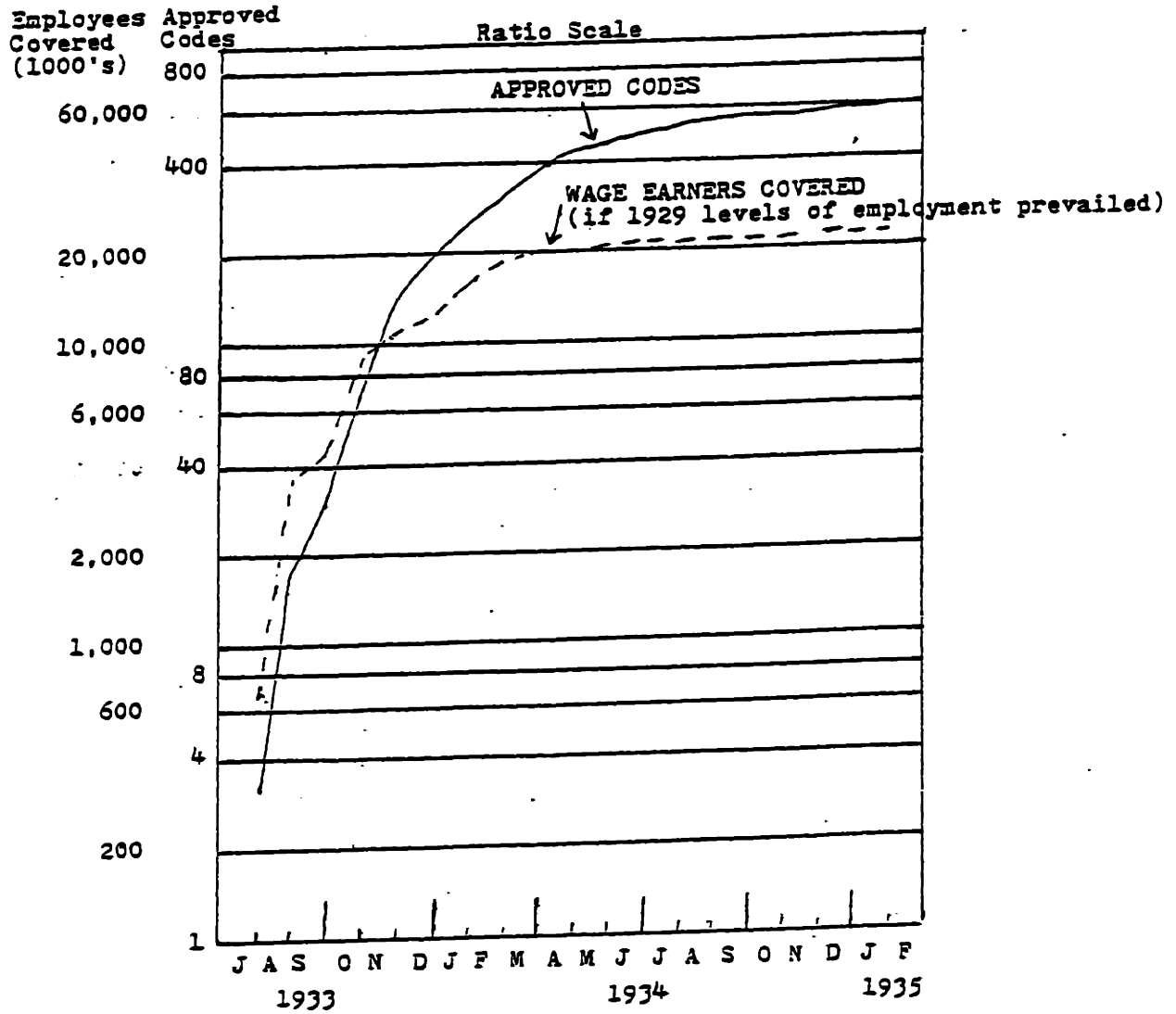
The PRA established a limit of thirty-five hours per week per employee for industrial workers (forty hours per week per employee for white-collar workers) and forty cents per hour (twelve to fifteen dollars per week) minimum wage. The PRA also incorporated Section 7a protections. The public pressure on firms to adopt the PRA also served to encourage them to rapidly submit industrial codes for approval; only then could they receive the (monopolistic) price and quantity controls that would help offset the labor protections of the PRA.

Most of the codes were proposed and approved between the Spring of 1933 and the Winter of 1934. By January, 1934, eighty percent of industry was codified; and by December, 1934 only a fraction of the eligible industries were not codified. Chart I-1 displays the progress of codification throughout the NIRA period (June, 1933 thru May, 1935).

The codes varied tremendously in coverage--from those which covered fifty individuals to those which

CHART I-1

THE PROGRESS OF CODIFICATION: CODES AND EMPLOYEES



Source: Research and Planning Division of the National Recovery Administration, Charts on the Operation of the National Industrial Recovery Act. (Washington, D.C.: National Recovery Administration, 1935). Chart Number 36.

covered more than three million. Approximately twenty codes, of the more than five-hundred, covered one-half of all codified employees. Table I-1 indicates the relative size of the codes.

Code drafting and adoption was a most complicated and diverse procedure. At times the result was contradictory and haphazard; for example, some firms were covered by multiple (and contradictory) codes. Even the institutional structure of the National Recovery Administration was repeatedly altered during the two years of its existence. Charts I-2 and I-3 display the structure of the entire National Recovery Administration both in its infancy and final stages.<sup>14</sup>

To institutionalize industrial self-government, industry groups were encouraged to draft, and even enforce, their own codes. Industry representatives successfully argued that it was the "prerogative of employers" to regulate firms. After all, if the code provisions were designed to benefit the firms, who else would better insure compliance than the firms themselves? The underlying ethic of the NIRA legislation was that, in exchange for the labor provisions, industry was to be granted the right to control its own economic fortunes.<sup>15</sup>

In the most general case, a pre-existing trade association would submit a set of recommendations to the National Recovery Administration. The application was

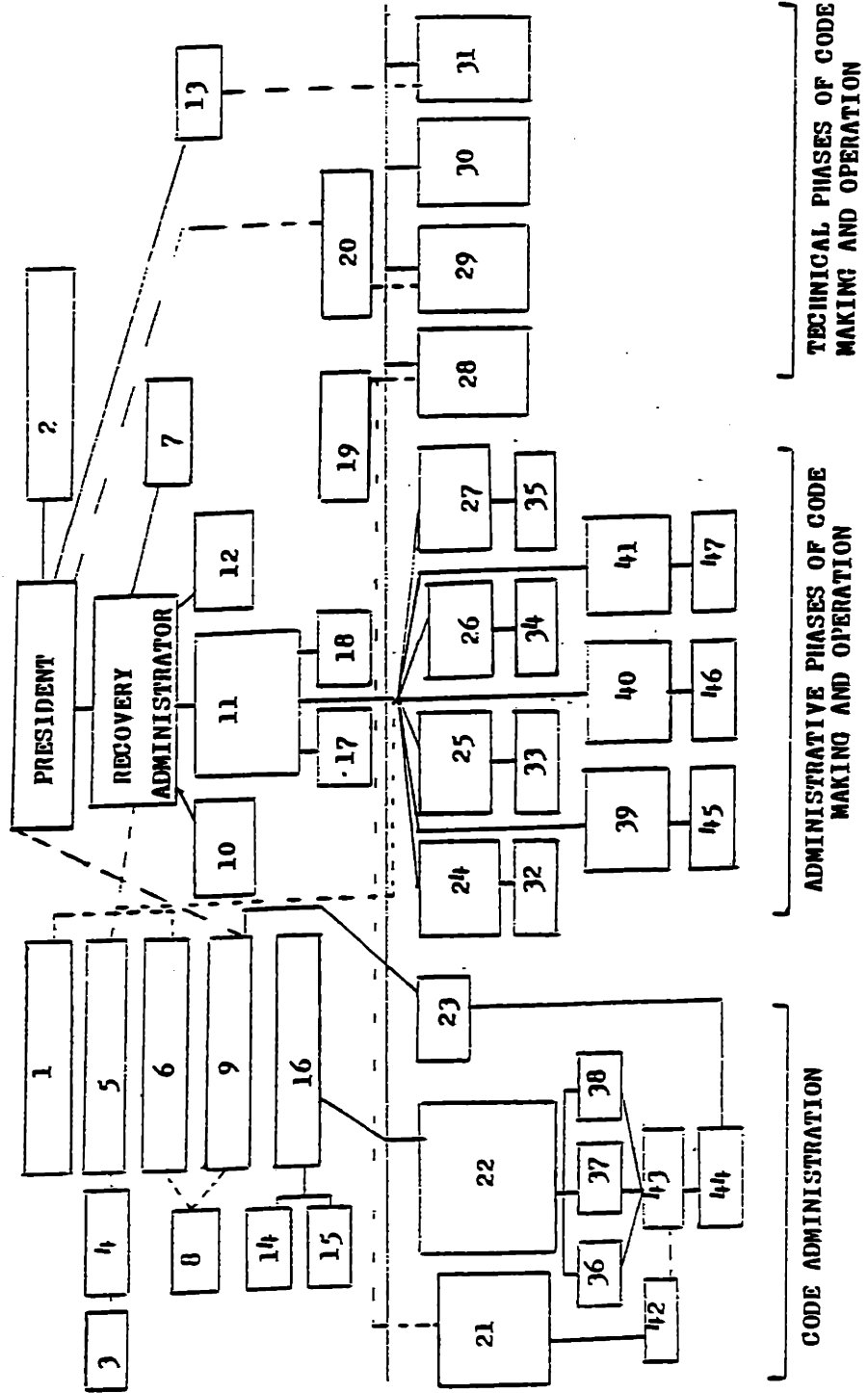
TABLE I-1

## DISTRIBUTION OF EMPLOYEES AMONG NRA CODES, AUGUST 8, 1934

EMPLOYEES PER CODE	NUMBER		PERCENT	
	CODES	EMPLOYEES	CODES	EMPLOYEES
1-4,999	283	473	54.7	2.1
5,000-9,999	68	456	13.2	2.1
10,000-19,999	51	701	9.9	3.2
20,000-29,999	24	576	4.6	2.6
30,000-39,999	14	480	2.7	2.2
40,000-49,999	12	519	2.3	2.4
50,000-99,999	23	1,560	4.4	7.1
100,000-249,999	21	2,971	4.1	13.5
250,000-499,999	15	5,492	2.9	24.9
500,000-999,999	3	1,739	0.6	7.9
1,000,000 and over	3	7,054	0.6	32.0

Source: Marshall, Leon C. Hours and Wages Provisions in NRA Codes, p. 4.

CHART I-2  
EARLY ADMINISTRATIVE ORGANIZATION OF THE NATIONAL RECOVERY ADMINISTRATION



## CHART I-2

(continued)

- |  |   |
|--|---|
| 1. Consumers Advisory Board                                      | 26. Administrative Division<br>(Division Administrator) |
| 2. National Emergency Council                                    | 27. Administrative Division<br>(Division Administrator) |
| 3. Department of Commerce  | 28. Trade Association Division                          |
| 4. Business Advisory and Planning<br>Council                     | 29. Research and Planning Division                      |
| 5. Industrial Advisory Board                                     | 30. Legal Division                                      |
| 6. Labor Advisory Board  | 31. Import Division                                     |
| 7. A.A.A. Liaison Officer  | 32. Deputy Administrators                               |
| 8. Department of Labor   | 33. Deputy Administrators                               |
| 9. National Labor Board  | 34. Deputy Administrators                               |
| 10. Assistant Administrator for<br>Labor                         | 35. Deputy Administrators                               |
| 11. Office of General Adminis-<br>tration (Executive<br>Officer) | 36. Administrative Branch                               |
| 12. Assistant Administrator<br>for Industry                      | 37. Labor Branch  |
| 13. U.S. Tariff Commission                                       | 38. Trade Practice Branch                               |
| 14. Department of Justice  | 39. Administrative Division<br>(Division Administrator) |
| 15. Federal Trade Commission                                     | 40. Administrative Division<br>(Division Administrator) |
| 16. National Compliance Board                                    | 41. Administrative Division<br>(Division Administrator) |
| 17. Control Division   | 42. Adjustment Agencies                                 |
| 18. Public Relations Division                                    | 43. State Compliance Directors                          |
| 19. Code Authority Organization<br>Committee                     | 44. Local Adjustment Boards                             |
| 20. Central Statistical Board                                    | 45. Deputy Administrators                               |
| 21. Administration Representa-<br>tive: Code Authorities         | 46. Deputy Administrators                               |
| 22. Compliance Division: National<br>Director of Compliance      | 47. Deputy Administrators                               |
| 23. Regional Labor Boards  |   |
| 24. Administrative Division<br>(Division Administrator)          |   |
| 25. Administrative Division<br>(Division Administrator)          |   |

Source: Research and Planning Division, National Recovery Administration.  
Charts on the Operation of the National Industrial Recovery Act.  
 (Washington, D.C.: National Recovery Administration, 1935).  
 Chart Number 2.



CHART I-3  
LATE ORGANIZATION OF THE NATIONAL RECOVERY ADMINISTRATION

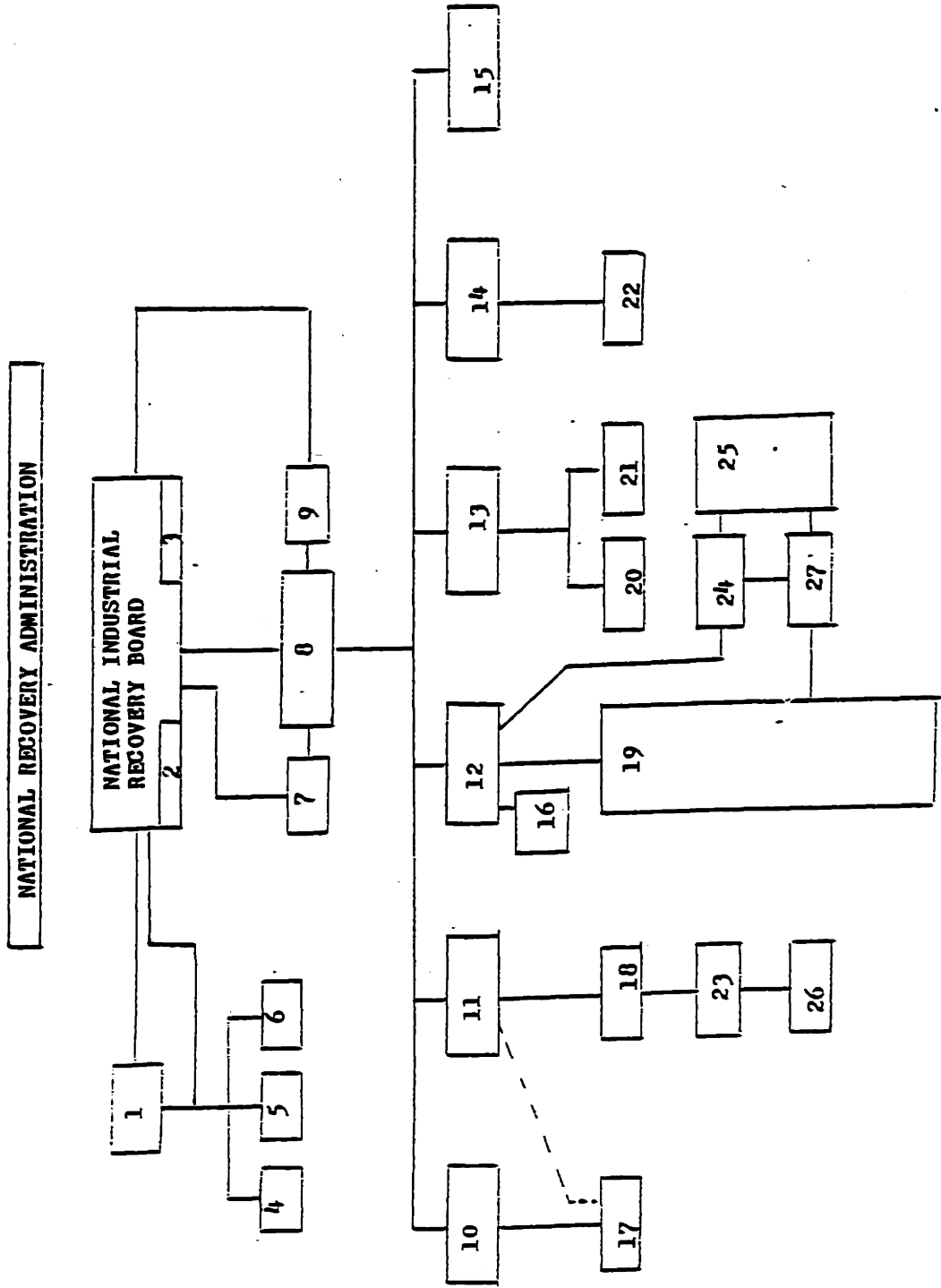


CHART I-3  
(continued)

1. ADVISORY COUNCIL
2. ECONOMIC ADVISOR
3. LEGAL ADVISOR
4. INDUSTRIAL ADVISORY BOARD
5. LABOR ADVISORY BOARD
6. CONSUMERS ADVISORY BOARD
7. INDUSTRIAL APPEALS BOARD
8. ADMINISTRATIVE OFFICER
9. PUBLIC INFORMATION
10. LEGAL DIVISION
11. COMPLIANCE AND ENFORCEMENT DIRECTOR
12. CODE ADMINISTRATION DIRECTOR
13. CONTROL OFFICER
14. REVIEW OFFICER
15. RESEARCH AND PLANNING DIVISION
16. CODE AUTHORITIES ACCOUNTS
17. LITIGATION DIVISION
18. COMPLIANCE DIVISION
19. (SEE BELOW)
20. CHIEF CLERK
21. COMMUNICATIONS DIVISION
22. REVIEW DIVISION
23. REGIONAL OFFICES FOR COMPLIANCE
24. DISTRICT OFFICES FOR CODE ADMINISTRATION
25. CODE AUTHORITIES
26. STATE NRA COMPLIANCE OFFICES
27. ADMINISTRATION MEMBERS
19. BASIC MATERIALS DIVISION, TEXTILES DIVISION, FOOD DIVISION, CHEMICALS DIVISION, EQUIPMENT DIVISION, MANUFACTURING DIVISION, CONSTRUCTION DIVISION, PUBLIC UTILITIES DIVISION, AMUSEMENTS DIVISION, GRAPHIC ARTS DIVISION, DISTRIBUTION DIVISION, PUBLIC AGENCIES DIVISION

Source: Research and Planning Division, National Recovery Administration, Charts on the Operation of the National Industrial Recovery Act. (Washington, D.C.: National Recovery Administration, 1935). Chart Number 1.

assigned to a deputy administrator who would convene a conference of:

1) the code committee (a self-appointed committee representing the applicant group which the deputy administrator determined to be representative of the industry);

2) a representative from the Labor Advisory Board (appointed by the Secretary of Labor);

3) a representative from the Industrial Advisory Board (appointed by the Secretary of Commerce);

4) a representative from the Consumer Advisory Board (appointed by the President);

5) a representative from the Legal Division of the NRA; and

6) a representative from the Research and Planning Division of the NRA.

Bargaining amongst the respective interest groups would ensue and a compromise code drafted. A public hearing would be held, whereupon the deputy administrator would issue a report to the Administrator of the NRA (or to the National Industrial Recovery Board, when a single Administrator was later abolished); the Administrator would, in turn, make a recommendation to the President. Finally, the President would either approve or reject the proposed code of fair competition.<sup>16</sup>

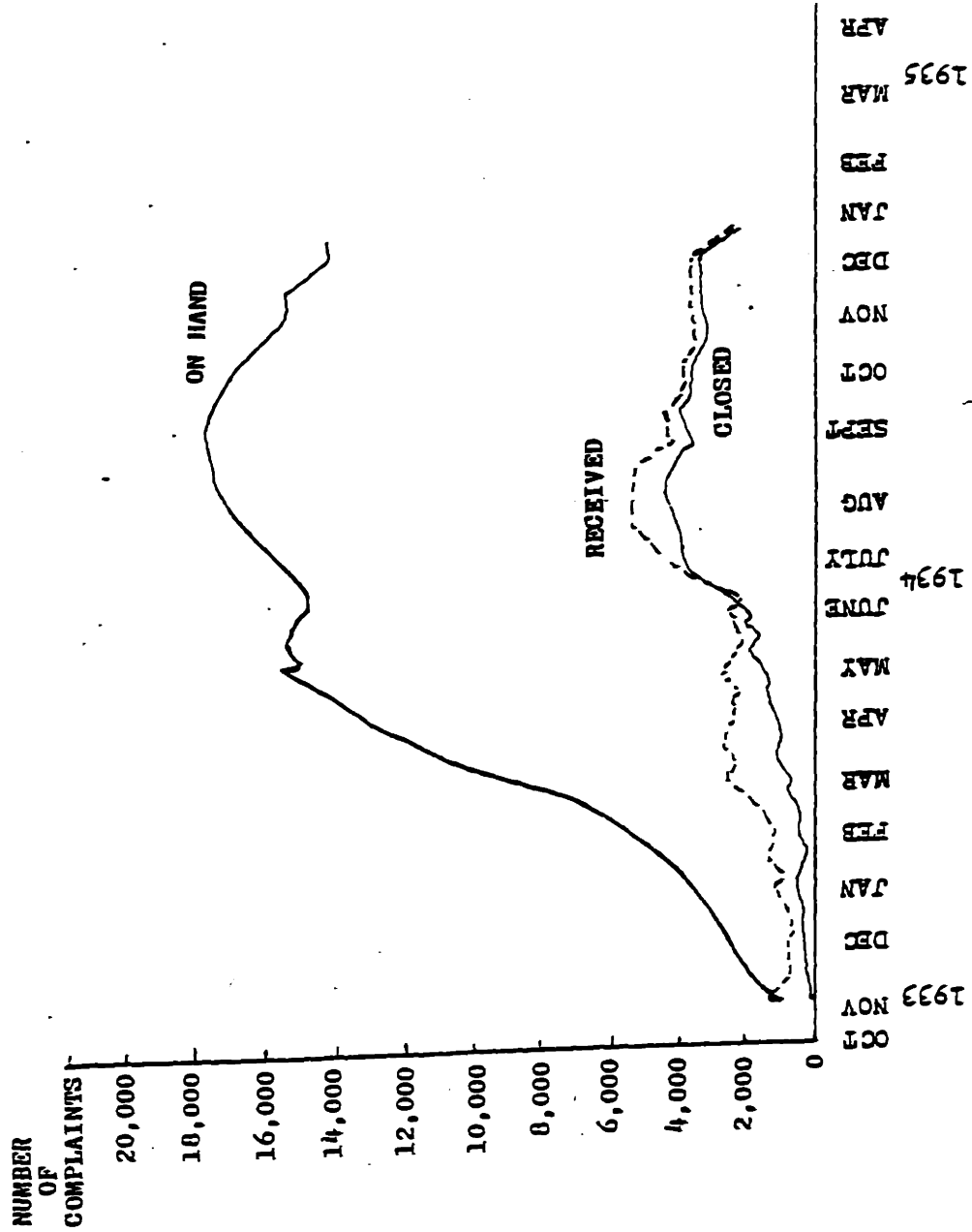
The code committees, which were charged with the

responsibility to administer the codes once Presidential approval was obtained, were often composed of only industry members and a deputy administrator of the NRA, who was also, typically, a businessman. During the entire process of drafting and administering codes, labor and consumer interests would frequently be represented only by the Labor and Consumer Advisory Boards at the original drafting conference and by direct participation at the subsequent public hearings. Codes conformed to the industry's view of its own self-interest unless there was decisive evidence that the codes established flagrant monopoly control.<sup>17</sup>

With the explosion of code approvals in 1933 and 1934 (and the simultaneous acceptance by most of industry of the President's Re-employment Agreement), the NRA was inundated with complaints of code violations (of both the labor provisions and the trade-practice provisions). Systematic and adequate investigation of the complaints became virtually impossible. Charts I-4 and I-5 enumerate the number of complaints throughout the NIRA period.

As with the code drafting procedures, compliance was haphazard. And because the NRA provided few formal mechanisms by which violators could be prosecuted, restitution became a prolonged and unevenly applied process. Many codes did not even provide for grievance procedures

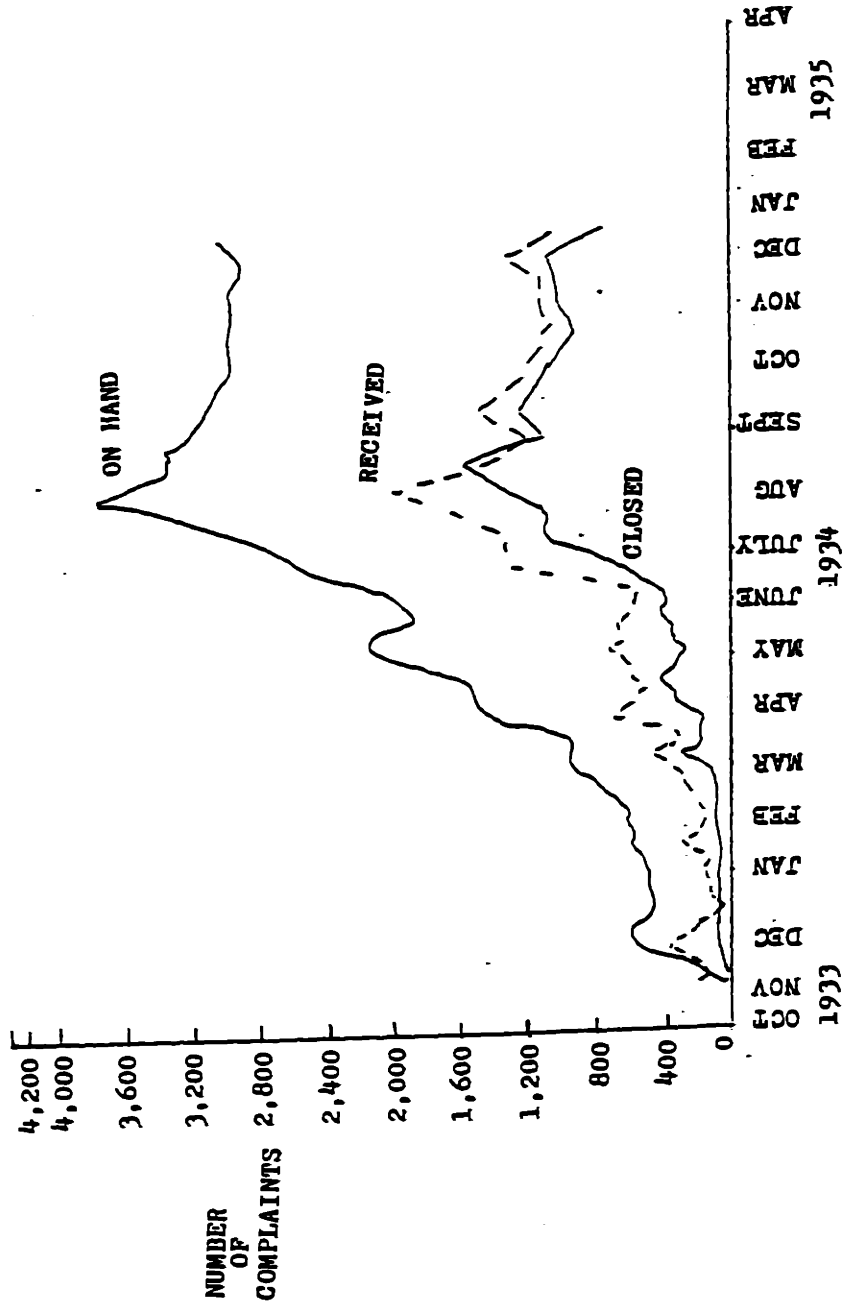
CHART I-4  
 LABOR PROVISIONS: COMPLAINTS RECEIVED, CLOSED AND ON HAND IN NRA COMPLIANCE FIELD OFFICES  
 NOVEMBER, 1933 --- JANUARY, 1935



Source: Research and Planning Division, National Recovery Administration.  
 Charts on the Operation of the National Industrial Recovery Act.  
 (Washington, D.C.: National Recovery Administration, 1935).  
 Chart Number 71.

CHART I-5

TRADE PRACTICE PROVISIONS: COMPLAINTS RECEIVED, CLOSED AND ON HAND IN NRA COMPLIANCE FIELD OFFICES  
 NOVEMBER, 1933 --- JANUARY, 1935



Source: Research and Planning Division of the National Recovery Administration. Charts on the Operation of the National Industrial Recovery Act. (Washington, D.C.: National Recovery Administration, 1935).  
 Chart Number 72.

for employees.<sup>18</sup>

Until October, 1933, complaints of code violations were referred to an NRA deputy administrator and, frequently, to the respective code authorities. Because various groups were under-represented (if not unrepresented), the one NRA administrator on each code authority had the responsibility to insure that the interests of labor, small business, and non-profit use of institutions were protected.

An NRA compliance Division (along with a National Compliance Director and National Compliance Board) was not established until late in 1933 and continued until May of 1934. Alleged violations of labor provisions (after the Spring of 1934) were generally investigated by the National Labor Board (and its successor, the National Labor Relations Board). Because of staff shortages, and the enormity of the task in the early months of the NRA, Department of Commerce officials were used as district NRA compliance directors, and even the President's Committee of Industrial Analysis concluded that compliance of the codes ". . . was left somewhat haphazardly to members of their [district offices of the Bureau of Foreign and Domestic Commerce of the Department of Commerce] clerical staffs. . . ." <sup>19</sup>

During 1934, state, and subsequently, regional

compliance offices were established. Compliance officers were not "enforcement agents" but could refer complaints to the respective code authorities (if the specific industry codes provided for mechanisms to handle the particular complaint), or directly seek an adequate response by the alleged violator. In the absence of an acceptable disposition of the complaint, the compliance officer would refer the case to the National Compliance Director, or, later, the National Compliance Board. By all accounts, the district offices were inadequately staffed:

The plain fact is that the NRA cannot possibly supervise code administration without an army of officials. Its whole reliance, in the case of the intricate codes, is upon (1) the probity, energy and public spirit of those upper code authorities with which it maintains contact, and (2) complaints of misconduct on the part of subordinate agencies which are transmitted either to the administrative or compliance divisions of the NRA.<sup>20</sup>

Nor were effective procedures for restitution established. The National Compliance Board, once cases were referred to it, had three main choices:

- 1) seek voluntary accords with the accused violator;
- 2) remove the NRA insignia or Blue Eagle emblem if the facts warranted; or
- 3) refer the case to the Federal Trade Commission or Department of Justice for prosecution.



In general, violations of trade-practice provisions were settled by promises from the accused to desist from the alleged activity; violations of wage provisions were generally settled by payments of withheld wages to the aggrieved workers (occasionally, with an additional penalty).<sup>21</sup>

Only after the NRA established a Litigation Division in early 1934 were a significant number of complaints referred to the courts. Nonetheless, most cases were entirely adjudicated by local NRA offices (almost 90,000 cases); a minority were referred to the National Conference Board (over 7,000 cases); less than 600 cases were settled in court.<sup>22</sup>

Most contemporary analyses of the NIRA agreed that the very complexity of the codes precluded complete compliance. The President's Industrial Review Committee argued that "many of the code provisions discredited the whole effort of compliance. . . ." <sup>23</sup> However, where well-organized trade associations or unions existed, compliance was easier to insure. It is revealing that twenty-five codes, from industries where small firms were dominant, contributed seventy-five percent of all labor complaints filed with the state offices of the NRA.<sup>24</sup> It should be noted that alleged violations of trade practices were far more difficult to investigate than violations of labor provisions, primarily because of the relative heterogeneity

of the former as they appeared in the different industry codes.

Most officials of the NRA would agree that the formal compliance agencies were overextended and haphazard. The NRA did argue, however, that it relied on firms to police their own codes and on labor to protest if its interests were compromised. Evidence presented in the next three chapters bears on the extent to which the NRA's reliance on self-government was misplaced. But a precise accounting of covert behavior is, so far, not available.

## IV

## WAGES, HOURS, AND OTHER LABOR PROVISIONS OF THE NRA CODES

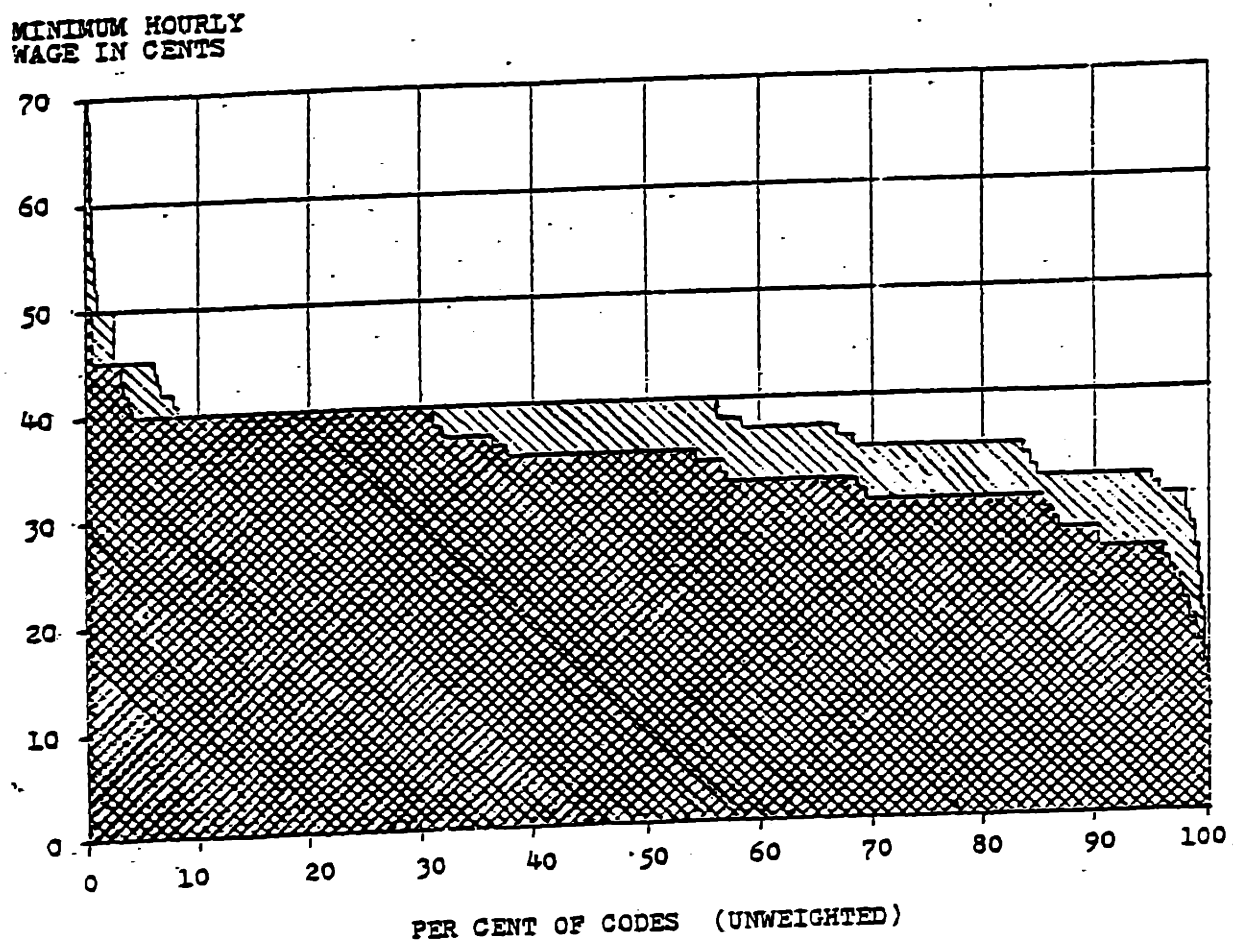
The wages and hours provisions of the NIRA codes varied from industry to industry, but all established a minimum wage and imposed a restriction on the maximum number of hours that any individual could work per week. It was recognized, however, that setting too high a minimum for certain classes of individuals would result in severe unemployment. Therefore specific exceptions to both the minimum wage and maximum hours regulations were provided in each code. For example, the minimum wage for the handicapped, aged, learners, and other special groups was set lower than that for unskilled production workers. Of course, Section 7a protections for collective bargaining and organizing were included in every code and child labor (generally defined as those less than sixteen years old) was abolished.

Despite individual code differences, the cotton textile code (the first code of fair competition to be adopted) set precedents for all subsequent industries.

The cotton textile code established a minimum wage of thirteen dollars per week, with a one dollar differential for Southern workers. Some workers (for example, learners) were exempt from the minimum wage restriction. Employees were not to work more than forty hours a week (except under carefully prescribed circumstances) and children under the age of sixteen were not to be hired. The first industrial code and the PRA standards were quite similar. The PRA also restricted employees to a maximum of forty hours per week, a minimum of forty cents per hour, and a minimum of twelve to fifteen dollars per week. Furthermore, the PRA included a clause that prohibited employees from reducing compensation for those individuals who earned more than the minimum wage even if they were to work fewer hours per week.

Despite individual industry differences, most codes resembled the broad outlines of the PRA and cotton textile code. For example, most specified a thirty-five to forty cents per hour minimum wage for male unskilled production workers. Geographic and demographic differentials were specified (and were generally less than five cents per hour, but some were significantly higher). Chart I-6 shows the distribution of codes according to the specific level of minimum wages. The single cross-hatched area refers to the highest minimum wage specified

CHART I-6  
 HOURLY WAGE MINIMA  
 (Based on 515 Codes)



Source: Research and Planning Division, National Recovery Administration. Charts on the Operation of the National Industrial Recovery Act. (Washington, D.C.: National Recovery Administration, 1935). Chart Number 46.

by the code (generally for those employees in Northern, large-city firms); the double-cross-hatched area refers to the lowest minimum wage specified (generally, of those employees in Southern, small-town firms). Chart I-7 shows the same distribution as in Chart I-6, except that the codes are weighted by the number of employees covered. As Charts I-6 and I-7 indicate, over eighty percent of all individuals in coded industries were subject to minimum wage regulations which allowed for differentials. The vast disparity in code structures with respect to wage provisions reflected the ambivalence of the NRA toward the legal establishment of differentials between sexes, races, geographical regions, and other divisions in the labor force. To be sure significant pre-NIRA differentials in wages persisted in the labor market; to ignore them in setting a universal minimum would impose unemployment on the very persons whose market wage would have been lowest. However, to institutionalize sexual and racial differences seemed repugnant to many.

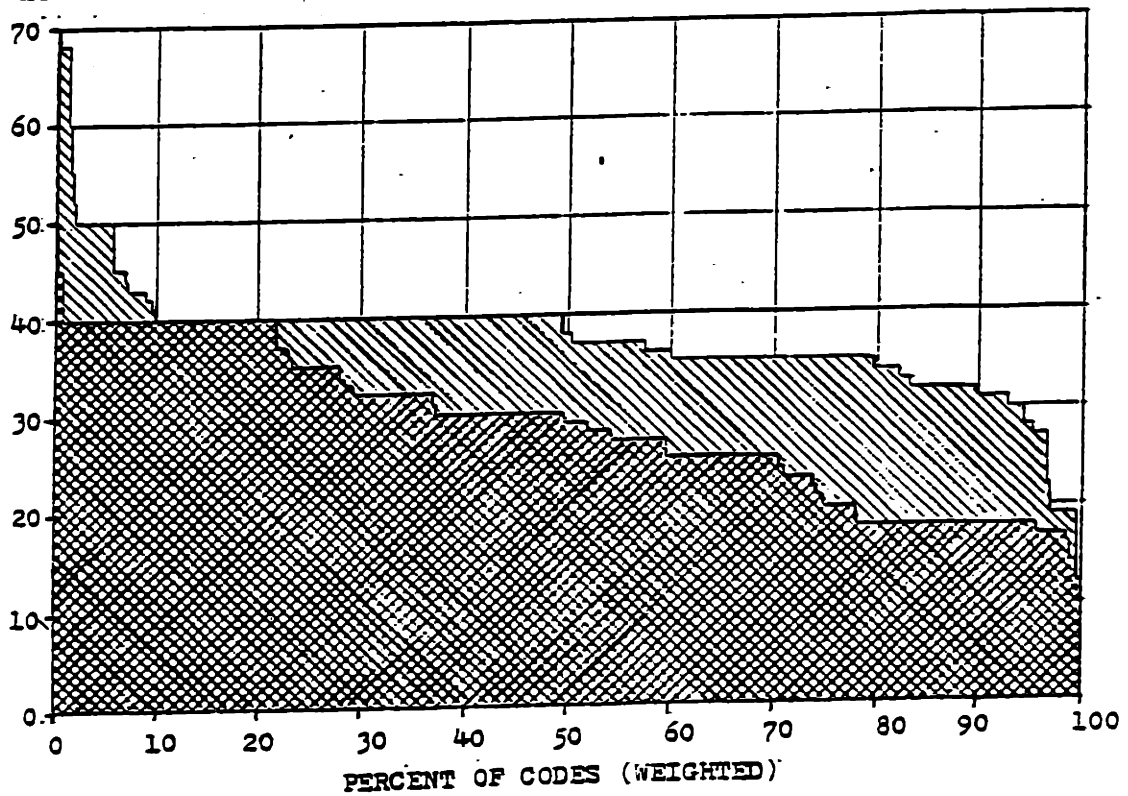
Individual codes were far more vague in specifying the adjustment of wages for individuals earning more than the minimum. For example, the PRA specified that the employer agreed:

. . . not to reduce the compensation of employment now in excess of the minimum wages hereby agreed to (notwithstanding that the hours worked in such employment

## CHART I-7

HOURLY WAGE MINIMA BY EMPLOYEES COVERED, WEIGHTED  
(Based on 515 Codes)

MINIMUM HOURLY  
WAGES IN CENTS



Source: Research and Planning Division, National Recovery Administration.  
Charts on the Operation of the National Industrial Recovery Act.  
(Washington, D.C.: National Recovery Administration, 1935).  
Chart Number 47.

may be hereby reduced) and to increase the pay for such employment by an equitable readjustment of all pay schedules.<sup>25</sup>

What the NRA would consider an "equitable adjustment" was never defined and thus the force of such requirements remained ambiguous.

Codes for industries with strong unions (for example, textiles and construction) would occasionally specify entire wage schedules. Many codes prohibited reducing weekly wages. For example, the textile code required that:

The amount of difference existing prior to July, 19, 1933 between wage rates paid various classes of employees (receiving more than the established minimum wage) shall not be decreased--in no event, however, shall any employer pay any employee a wage rate which will yield a less wage for a work week of forty hours than such employee was receiving for the same class of work for the longer week of forty-eight hours or more prevailing prior to July 17, 1933.<sup>26</sup>

Occupationally, differentials in wages prior to code adoption were to be maintained.

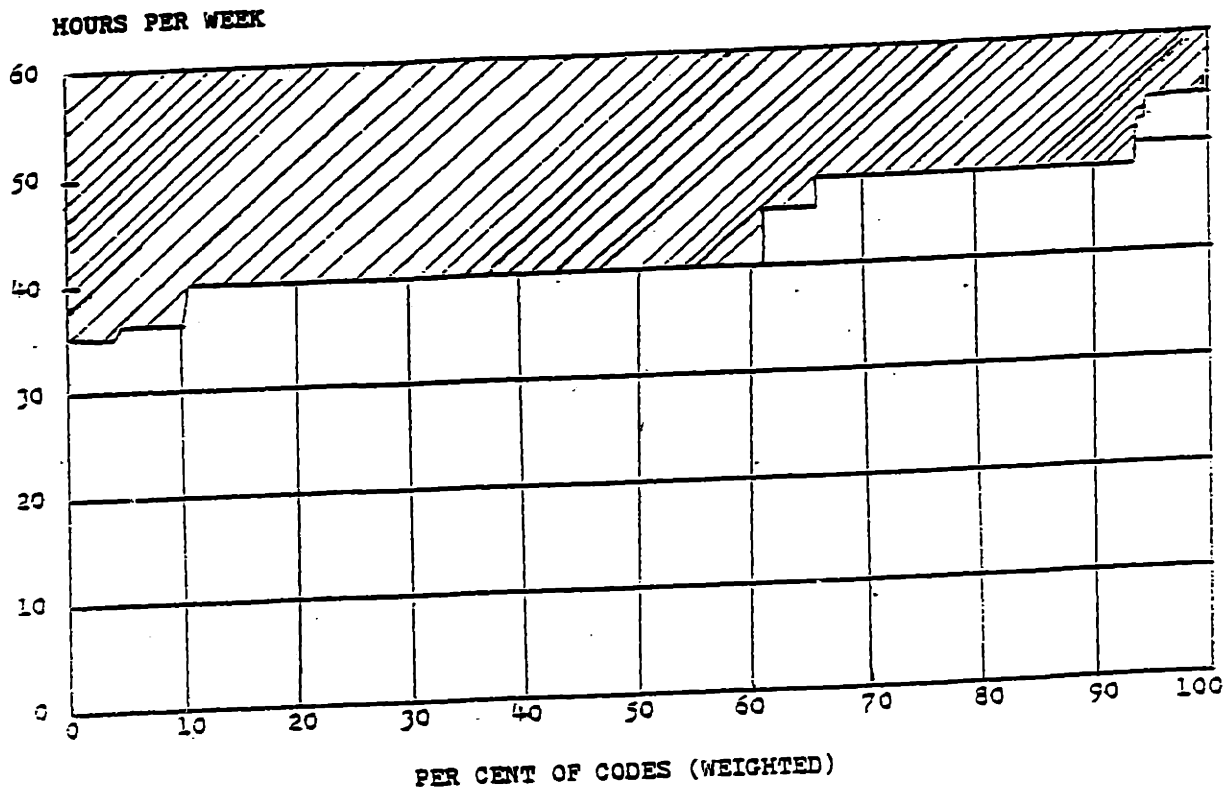
Most codes specified that employees could work no more than thirty-six or forty hours per week, with forty hours per week the more common restriction. Chart I-8 presents the distribution of codes according to the specific maximum placed on average hours worked per week. Many codes allowed for averaging, limited overtime,



CHART I-8

## MAXIMUM WEEKLY HOURS BY EMPLOYEES COVERED

(Based on 516 Codes)



Source: Research and Planning Division, National Recovery Administration. Charts on the Operation of the National Industrial Recovery Act. (Washington, D.C.: National Recovery Administration, 1935). Chart Number 38.

peak-period exceptions, and occupational exception; however these exceptions were rarely consequential.

The net of the foregoing examination of the number of excess hours permitted under the averaging provisions is either that the number is small; or, if large, that it is usually attended by other safeguards which in practice keep it within narrow bounds.<sup>27</sup>

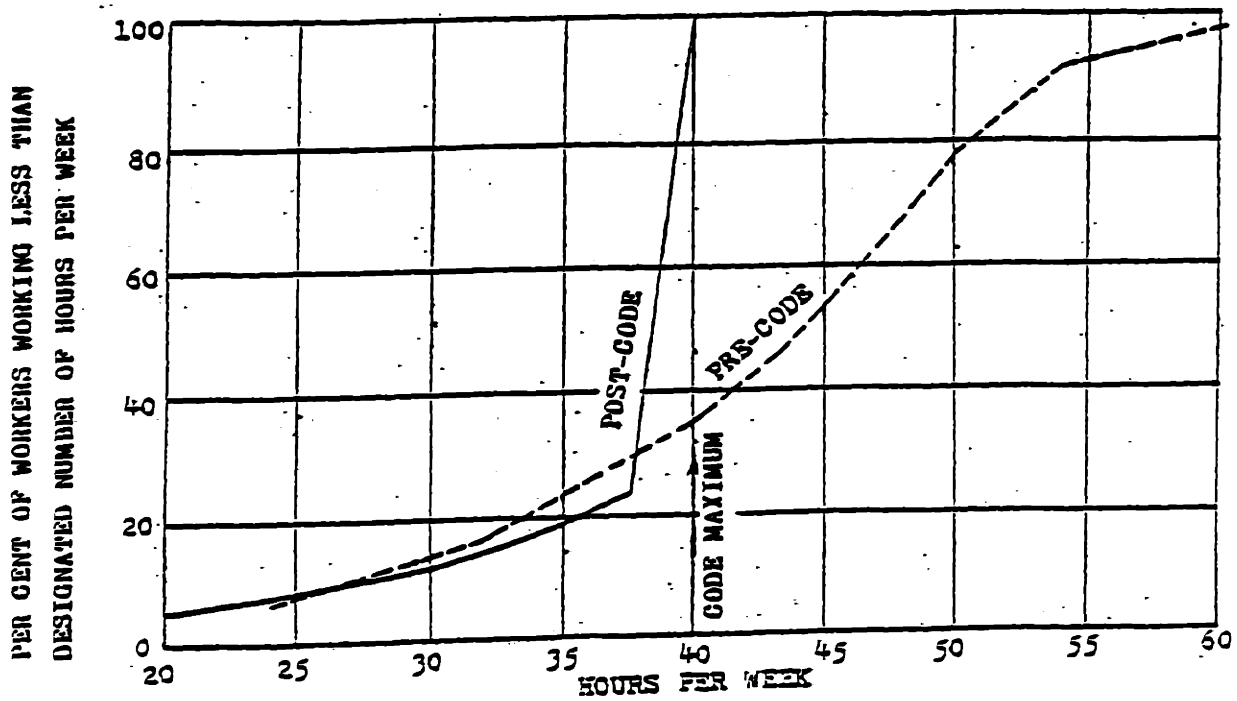
According to both the NRA and researchers at the Brookings Institution, at the 1929 levels of production, the hours limitations resulted in a (approximately) five hour per week reduction in average hours worked per employee. This reduction added an additional 1.5 to 2.5 million persons to payrolls.<sup>28</sup> By March, 1935, two million individuals represented about one-half of the entire two-thirds increase in employment. Economist Charles Roos agreed with the (approximately) two million figure.<sup>29</sup> To indicate the impact of the maximum hours regulation, Chart I-9 shows the pre- and post code percentages of individuals working less than the designated maximum hours per week for one industry. The effectiveness of the regulation is dramatic.

Finally, by mandate of the original legislation, every code incorporated the substance of Section 7(a) of the NIRA:

Every code of fair competition, agreement, and license approved, prescribed, or issued under this title shall contain

CHART I-9

EFFECT ON WORK WEEK DISTRIBUTION OF WELL ENFORCED CODE WHICH PROVIDES TIME AND ONE-THIRD FOR HOURS OVER 40



Source: Research and Planning Division, National Recovery Administration  
Charts on the Operation of the National Industrial Recovery  
 Act. (Washington, D.C.: National Recovery Administration,  
 1935). Chart Number 39.

the following conditions: (1) that employees shall have the right to organize and bargain collectively through representatives of their own choosing, and shall be free from the interference, restraint, or coercion of employers of labor, or their agents, in the designation of such representatives or in self-organization or in other concerted activities for the purpose of collective bargaining, or other mutual aid or protection; (2) that no employee and no one seeking employment shall be required as a condition of employment to join any company union or to refrain from joining, organizing, or assisting a labor organization of his own choosing; and (3) that employers shall comply with the maximum hours of labor, minimum rates of pay, and other conditions of employment, approved or prescribed by the President.<sup>30</sup>

## TRADE-PRACTICE PROVISIONS OF THE NRA CODES

As implied by the title "codes of fair competition", the trade provisions were designed to restrict competitive forces (which were the cause of continuing economic stagnation, both labor and management agreed). Trade-practice restrictions were even more varied than were the labor provisions; more than 1,000 different types of regulations appeared in the industrial codes. The following provisions were generally included:

1) minimum prices, below which no firm could charge. These regulations became very complex in order to preclude secret or implicit price reductions. Some codes prohibited sales below individual firm cost; others prohibited sales below average industry cost.

2) open prices, where a firm's prices had to be formally published. Some codes provided for a waiting period--a time between the announcement of price changes and their implementation.

3) basing-point systems for prices.

4) resale price maintenance schemes.

5) machine, plant, or business hour limitations, to cure "overproduction."

6) production quotas.

7) limitations on capacity, for similar reasons as the limitations on hours and production.

8) limitations on price discrimination, to prevent covert price reductions.

9) limitations on rebates, consignment sales, price guarantees, quantity discounts, free deals, trade-in allowances, sales with repurchase agreement, dumping, and a multitude of other sales practices.

10) limitations on product classification and standardization.

To anticipate all contingencies by which firms might try, for example, to covertly cut prices, the codes became exceedingly complex. Not only this complexity, but also the imprecise specification of the trade-practice regulations rendered enforcement difficult. For example, the manner in which costs were to be determined for the purposes of setting prices was never specified in the codes, thus, compromising the effectiveness of minimum prices based on prohibiting sales below cost.<sup>31</sup>

In charges to be reviewed in Chapter III of this study, many have claimed that the trade-practice section

of the codes served to advance the economic position of the large, well-organized firms at the expense of small and unorganized competitors. The codes, it was charged, "placed independent retailers at a still further disadvantage by driving all prices to the established 'floor' and eliminating the differential essential to their existence."<sup>32</sup> A claim to which the National Recovery Review Board (Darrow Committee) lent support was that minimum prices, quality restrictions, and similar regulations eliminated the competitive position of firms providing (admittedly) lower quality products at low prices.<sup>33</sup> The codes, in short, were accused of fostered monopolistic control of markets and protected high-price and relatively inefficient producers.

## VI

## PREVIOUS EVALUATIONS OF THE NATIONAL INDUSTRIAL RECOVERY ACT

Great controversy has surrounded the passage and implementation of the NIRA; the debate has only slightly diminished with time. Is the NIRA to be dismissed as a quickly-aborted two-year experiment of little lasting significance? Or, was the NIRA the harbinger of increased national planning and government regulation that would characterize the U.S. in the second half of the twentieth century. And should the increased monopolization (and unionization) of the economy be considered, at least in part, the legacy of the NIRA?

Some have proclaimed the NIRA to be of monumental importance. Never would the country return to economic passivity; rather, governmental policy would be used to accomplish what the private market left debased. For example, William Green, prior to NIRA implementation, proclaimed Section 7(a) the "Magna Charta" for labor. And Arthur Schlesinger concluded his examination of the NIRA as follows:

The more enduring achievements of NRA lay not in the economic but in the social field. Here NRA



accomplished a fantastic series of reforms, any one of which would have staggered the nation a few years earlier. It established the principle of maximum hours and minimum wages on a national basis. It abolished child labor. It dealt a fatal blow to sweatshops. It made collective bargaining a national policy and thereby transformed the position of organized labor. It gave new status to the consumer. It stamped out a noxious collection of unfair trade practices. It set new standards of economic decency in American life--standards which could not be rolled back, whatever happened to NRA. . . . More than this, NRA helped break the chains of economic fatalism which had so long bound the nation. . . . Of equal importance, NRA taught the people the meaning and implications of the national economy. It collected basic industrial information, often for the first time. . . . It accustomed the country to the feasibility of government regulation and taught people to think in terms of national policy for business and for labor.<sup>34</sup>

Charles Roos, one-time Director of Research of the National Recovery Administration and later Director of Research of the Cowles Commission for Research in Economics, evaluates the NIRA in a similar fashion:

Whatever were the NRA's shortcomings, no other governmental agencies ever aspired to such comprehensive reform--the fixing of minimum wages and the shortening of hours of work to abolish the sweatshop, the encouragement of unionization for collective bargaining. The codification of fair trade practices, the outlawing of child labor, and a host of others. Each reform in itself was a major operation on the economic and social organism. Collectively, they were daring beyond imagination.<sup>35</sup>

Others, however, have cited--with at least equal fervor--the retrograde, if not fascistic, legacy of the industrial codes. Norman Thomas, Socialist party leader proclaimed that the NRA "set up . . . a capitalist syndicalism still operated for profit, a scheme which is in essence fascistic."<sup>36</sup>

Still others opposed the NIRA for its radical departure from reliance on the "free market" and substitution of government regulation. William Randolph Hearst charged the NRA with being a "socialist dictatorship" and Senator Gerald P. Nye (Republican from North Dakota) accused the NRA of establishing monopolies.<sup>37</sup>

Many historians, have focused on the alleged anti-labor bias of the NRA. Historian William E. Leuchtenberg argued that Roosevelt had "assumed a community of interest of the managers of business corporations and the directors of government agencies."<sup>38</sup> Himmelberg and Schlesinger agreed that the constituency of the NRA was organized business and organized labor, with the former prevailing in its view that only cartelization would promote recovery.<sup>39</sup> Bernard Bellush, in a recent history of the NIRA argued that Hugh Johnson (Administrator of the NRA) was willing to offer endless concessions to industry in order to secure speedy agreement on codes. Furthermore, because businessmen

controlled code administration and enforcement),<sup>40</sup> "provisions for maximum prices, salary limitations, and profit controls were nonexistent."<sup>41</sup> And because consumers lacked organized support, Bellush accused Johnson and other NRA officials of granting "every conceivable kind of quasi-monopolistic practice injurious to the consumer."<sup>42</sup> The National Consumer League, as well as labor leaders, charged industry with circumventing the intent, if not the letter, of the codes. Payrolls were diminished by hiring learners, women, and others who qualified for lower minimum wages; skilled wages were reduced when ambiguously-worded codes allowed; firms would renege on dismissal wages; the appointment of labor representatives to code authorities were blocked; and workers were reclassified to avoid the maximum-hours provisions.<sup>43</sup> Bernard Bellush concludes his indictment of industrial self-government with the following:

Innumerable cases were cited by public and institutional purchasing agents, large retailers, farm organizations, and consumer groups of prices raised by enormous percentages and then standardized, of the elimination of competitive safeguards, and of a pattern of identical contract bids which indicated collusion by steel. . . . In over a thousand pages of testimony, witness after witness contended that the open-price provision written into many codes . . . facilitated a decided trend toward

monopolistic price-fixing, insured uniformity of price quotation, and illustrated the true nature of self-government in industry.<sup>44</sup>

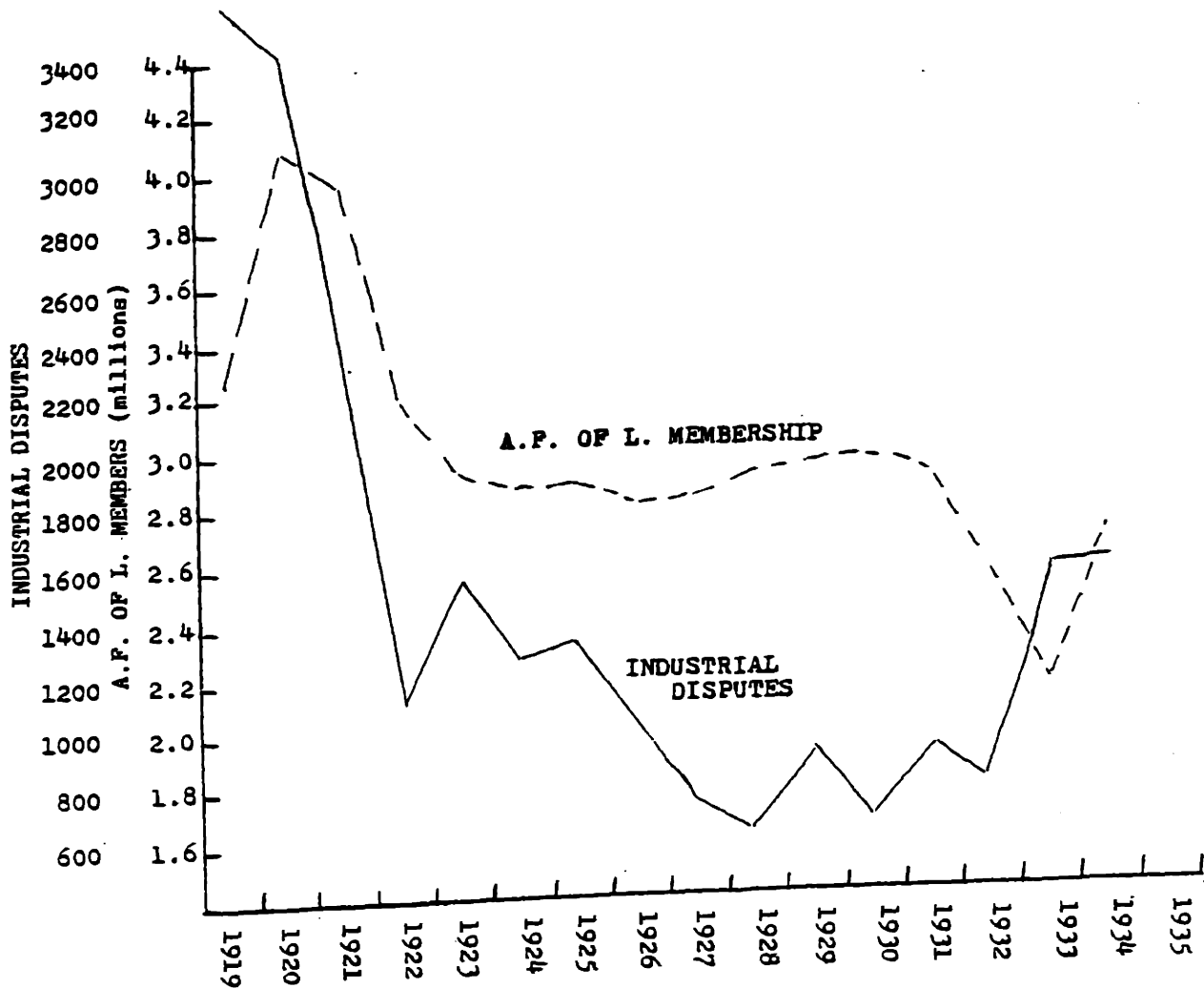
The NRA was also accused of discrimination against blacks and women. In particular, the National Consumer League alleged<sup>5</sup> that industry, with NRA complicity, drafted codes with lower minimum wages for women in order to "exploit" a cheap source of labor.<sup>45</sup>

Perhaps the most vituperative of exchanges occurred over the alleged NRA refusal to comply with Section 7(a).<sup>46</sup> Company unions prospered under the NIRA and neither Johnson nor Richberg (general counsel of the NRA and later Administrator) would prohibit open shops (contrary to the interpretation of Section 7(a) by labor leaders such as Sidney Hillman, David Dubinsky, John L. Lewis, and even William Green, an early and enthusiastic supporter of the legislation). Despite the growth of union membership, millions of workers remained without collective bargaining rights and without representatives of their own choosing. Strikers were blacklisted; pickets imprisoned. Chart I-10 details the course of union membership and industrial disputes from 1919 thru 1935.

However, as with all issues surrounding the NIRA, there were dissenting voices. Roos argues that labor did significantly gain under the industrial codes:

CHART I-10

TRADE UNION MEMBERSHIP AND INDUSTRIAL DISPUTES: 1919-1935



Source: Research and Planning Division, National Recovery Administration. Charts on the Operation of the National Industrial Recovery Act. (Washington, D.C.: National Recovery Administration, 1935). Chart Number 142.

From the point of view of organized labor this phase of the NRA was highly successful: membership in the American Federation of Labor, which reached a low of slightly over 2,100,000 in June, 1933, turned very sharply upward and rose to over 2,700,000 by the end of 1934; and membership in company unions also greatly increased. Even labor leaders admitted that a considerable portion of their gain could not have been accomplished without section 7a of the NIRA which, we have seen, required endorsement of collective bargaining by all industries writing codes.<sup>47</sup>

But most historians agree with Charles Roos about the contradictory character of the legislation and its implementation:

No directions were given for reconciling such conflicting proposals as: drastic social reforms and economic recovery; the curtailment of production and increased use of productive capacity; the restriction of private investment in new plant and the undertaking of public works to stimulate the heavy-goods industries; the setting of minimum wages which would not permanently close any plants; drastically shortened hours of labor and higher standards of living within two years; price fixing and preservation of the freedom of competition; and minute regulation of industrial practices, including price and production control by industry, without development of monopolistic practices.

. . . to such the NRA added a haphazard method of code writing involving the bargaining of two groups--industry and labor--whose strength varied from industry to industry, for the purse of a third--the consumer. Confusion was the inevitable consequence of such undirected bargaining. . . .<sup>48</sup>

The contradictory nature of the NIRA and its haphazard implementation have made historical analysis difficult and help to explain the continuing debate about the legislation's social and political implications.

In addition to the political and social debates discussed above, there has also been controversy concerning specifically economic issues. The debates about the redistributive and macro-economic impacts of the industrial codes during the two-year NIRA period constitute the focus of this study. Three major controversies will be discussed:

1) to what extent was the NIRA responsible for the aberrant (inflationary) behavior of wages and prices in the aftermath of the Great Depression when approximately one-quarter of the labor force remained unemployed? Did labor markets during 1933-1935 fail to respond to normal competitive forces?

2) did the NIRA successfully redistribute income to labor, in general, and to the relatively disadvantaged, in particular. After all, wages above the minimum were not, in general, even regulated. To what extent did employers reduce them, or not adjust them "equitably"? Was enforcement of other wage and hour provisions so lax that employers avoided increasing payrolls minimally, if not entirely?

3) did the NIRA promote economic recovery?

There have been two major types of explanations for the coincidence of massive unemployment and persistent inflation after June of 1933. Albert Rees has argued that a "dual" market existed in which the wages of those who were employed were determined independently of the number of those who remained unemployed.<sup>49</sup> Robert E. Lucas, Jr. and Leonard A. Rapping have contradicted Rees' theory by arguing that no special theory of the labor market is required to explain most of the wage and price behavior during the 1930's.<sup>50</sup> The present study will confirm part of both of these explanations (and thereby contradict part of both of these theories). The unemployed, in contradiction to Rees, did continue to exert deflationary pressures characteristic of more normal periods; however, the enactment of wage and price controls under the NIRA did deter (downward) price flexibility in a manner that was significantly different from other periods.

Economists and historians have also disagreed about the NIRA's precise redistributive impact. However, most have argued that the NRA's attempt to redistribute income to the relatively poor was unsuccessful, if not actually counterproductive. Two reasons are most frequently cited by those who proclaim the NIRA's failure to redistribute income to, for example, labor:



1) political control of the codification process by representatives of business, in general, and big business, in particular, rendered the NRA incapable of differentially boosting labor income at the expense of property income. Bellush, for example, has concluded that a "dominant place was automatically assured trade associations,"<sup>51</sup>

2) average hourly wages and prices increased, during the NIRA period, at similar rates. The Brookings Institution concluded that "gains in money earnings from this cause were offset by the effect of the NRA on the prices."<sup>52</sup> The same study further concluded that "If the NRA had as one of its objectives a basic redistribution of the income of the nation to the advantage of labor . . . its effect along this line have had comparatively little success."<sup>53</sup> George Terborgh agreed. "The codes, therefore did little to change the distribution of the nation's aggregate income."<sup>54</sup> And Charles Roos argued that labor income was actually eroded under the NIRA codes.<sup>55</sup>

This study will contradict these findings. By examining what wages and prices would have been in the absence of the codes, it will be argued that the codes dramatically increased the earnings of employed labor, on average, and especially increased the earnings of the

relatively unskilled workers. Other distributional consequences are detailed in the next section.

Economists and historians have also tended to dismiss the importance of the macro-economic impact of the industrial codes. In 1935, George Filipetti and Roland Vaile concluded that "there was practically no expansion in purchasing power" under the NRA codes and Ellis Hawley recently pronounced that the "National Recovery Administration, it is not generally agreed, did almost nothing to promote national recovery."<sup>56</sup> Similarly, Arthur M. Schlesinger, Jr. has concluded that the "ending of the NRA price-fixing would certainly not, for example, have induced much expansion."<sup>57</sup> Some previous analyses have suggested that the NRA's macro-economic impact might even have been minimally beneficial. Schlesinger argued that the codes "did succeed in placing a floor under the wage-price spiral."<sup>58</sup> And Ellis Hawley has recently argued that "what the NRA might be credited with was a sort of holding action."<sup>59</sup>

This study will conclude that the NIRA's macro-economic impact was considerable and deleterious to recovery from the Great Depression. By reducing the real money supply, diminishing real wealth, and increasing the relative wage rate, the codes induced considerably more unemployment than would have occurred in their

absence.

Arthur M. Schlesinger, Jr. summarizes his findings by claiming that the "NRA's strictly economic contributions to recover were limited. . . . The enduring achievements of NRA lay not in the economic but in the social field."<sup>60</sup> It is the determination of the present study that, whatever the achievements in the social field, the NRA's "strictly economic contributions" were not negligible. Though some redistribution of income to labor was accomplished, the legislation hindered, rather than promoted, recovery.

## VII

## SUMMARY OF THIS STUDY'S CONCLUSIONS

In the attempt to resolve the questions concerning the NIRA's macro-economic and redistributive impacts during 1933-1935 (which were discussed at the end of Section VI), this study will derive the following set of conclusions.

The NIRA codes had the following consequences for nominal wages and prices (as analyzed in Chapter II of this study):

- 1) the labor market in the early and middle 1930's was not immune to the unemployed; rather, they continued to exert their normal deflationary impact on wages. However, the industrial codes had a more than off-setting inflationary impact on wages.

- 2) the NIRA increased prices in the early 1930's by two mechanisms. First, the codes increased wages, as stated under 1). Second, the codes conferred increased monopoly power to industries.

- 3) the industrial codes were responsible for as much as a twenty-six percent annual increase in wages and a fourteen-percent annual increase in prices during

the NIRA period.

4) therefore, no support is provided for any theory that attributes wage and price rigidity to the private economy of the early and middle 1930's. Nor is statistical support found for any "dual" labor market theory which argues that the unemployed were shut out from exerting a sizeable deflationary impact on labor markets.

5) the bulk of wage boosts accompanied passage of the President's Re-employment Agreement and did not necessarily await passage of industry-specific codes (which reflects on the similarity of labor markets in the 1930's to more normal times).

6) passage of specific industry codes had more influence on the timing of price increases.

7) nullification of the codes after the Schechter Decision resulted in a fourteen percent annual decrease in wages and only half as great reduction in prices (approximately seven percent). Thus, labor seemed less capable of protecting its gains under the NIRA than did business.

The redistributive consequences of the NIRA were as follows (as analyzed in Chapter III of this study):

8) the NRA did have significant distributional

consequences.

9) average hourly earnings were increased relative to prices so that the NIRA attempt to raise the real wage rate of labor did succeed.

10) hours restrictions on employees did spread the given amount of employment over significantly more individuals.

11) the codes significantly reduced the differential in average hourly earnings between: (a) the relatively skilled and the unskilled workers; (b) workers in low-pay and high-pay industries; (c) male and female workers. However, the reduction of the differential in average weekly earnings between these groups was much less dramatic, since the average hours worked per week of the low-paid workers fell considerably. Employment of the low-paid workers suffered after the imposition of the minimum wages. Nonetheless, the weekly earnings for the low-paid still rose relative to the weekly earnings for higher-paid workers (though for females, the difference was only moderate). Thus, the NRA was successful in its efforts to insure a redistribution of income toward disadvantaged workers.

12) though quantification is difficult, the evidence does suggest that the NIRA did confer more economic advantages to the larger and more politically-powerful

firms within industries--at the expense of smaller, unorganized firms. To the extent that this was true, the codes might have contributed to more inequality in the economy.

Some macro-economic implications of the NIRA were as follows (as analyzed in Chapter IV):

13) As yet, no definitive estimate of the entire macroeconomic impact of the NIRA codes is possible.

14) the codes did vitiate the potential impact of the monetary expansion after June, 1933. The associated (average annual) loss in real output was certainly between zero and fourteen percent. Conjectural evidence (based on the post-war experience of the U.S. economy) suggests that the codes eliminated a potential eight percent average annual increase in real output (and a fifteen percent reduction in the number of individuals who were unemployed during the NIRA period).

15) the NIRA-induced diminution of real wealth (due to the inflationary consequences) was responsible for a six to eleven percent reduction in annual GNP during the two years of the NIRA codes.

16) the NIRA-induced increase in relative wages (the reflection of the redistribution of income toward labor) added another (approximately) two percent to the unemployment rate, on average during the NIRA period.

17) the stimulus to economic growth due to the

redistribution of income to labor might have off-set the recessionary impact of the diminution of real wealth [mentioned under 16)].

Chapters II, III, and IV will provide the evidence for these assertions.



## CHAPTER I FOOTNOTES

1. Schlesinger, Arthur M., Jr. The Coming of the New Deal, p. 102.
2. Emergency Banking Act (March 9); Civilian Conservation Corp. (March 31); Gold standard abandoned (April 19); Federal Emergency Relief Act (May 12); Agricultural Adjustment Act (May 12); Tennessee Valley Authority Act (May 18); Truth in Securities Act (May 27); Home Owners Loan Act (June 13), as examples.
3. By January 1, 1934, ninety percent of all industrial workers were covered by NRA regulations.
4. United States National Recovery Administration. Report of the President's Committee of Industrial Analysis, pp. 1-16.
5. Lyon, Leverett S., Homan, Paul T., Lorwin, Lewis L., Terborgh, George, Dearing, Charles L. and Marshall, Leon C. The National Recovery Administration: An Analysis and Appraisal, p. 3.
6. Ibid., Chapter 32. United States National Recovery Administration. Report of the President's Committee of Industrial Analysis, pp. 1-16.
7. Himmelberg, Robert F. The Origins of the National Recovery Administration: Business, Government, and the Trade Association Issue, 1921-1933, pp. 181-212. Bellush, Bernard. The Failure of the NRA, pp. 1-29. Schlesinger, op. cit., pp. 87-98.
8. Lyon, et al., op. cit., p. 758.
9. Roos, Charles Frederick. NRA Economic Planning, p. 443.
10. Lyon, et al., op. cit., pp. 889.
11. Title I, National Industrial Recovery Act, Section 7(a).
12. Exempt from NIRA codes were agriculture, steam railroads, anthracite coal, government, domestic service, professional services, and non-profit

institutions.

13. Roos, op. cit., p. 89.
14. United States National Recovery Administration. Work Materials No. 85 (History of the Compliance Division) and No. 19 (History of the Review Division).
15. Hawley, Ellis W. The New Deal and the Problem of Monopoly, pp. 53-71. Bellush, op. cit., pp. 1-29. Schlesinger, op. cit., pp. 87-98.
16. United States National Recovery Administration. Report of the President's Committee of Industrial Analysis, pp. 17-38.
17. Bellush, op. cit., pp. 30-54. Schlesinger, op. cit., pp. 126-138.
18. United States National Recovery Administration. Work Materials No. 85 History of the Compliance Division.
19. United States National Recovery Administration. Report of the President's Committee of Industrial Analysis, p. 60.
20. Lyon, et al. op. cit., p. 283.
21. United States National Recovery Administration, Report of the President's Committee of Industrial Analysis, pp. 59-77.
22. Ibid., p. 72.
23. Ibid., p. 76.
24. Ibid., p. 77.
25. President's Re-Employment Agreement, paragraph 7 (quoted in Lyon, et al., op. cit., p. 344).
26. Lyon, et al., op. cit., p. 344.
27. Ibid., p. 373.
28. Ibid., p. 833. United States National Recovery Administration: Report of the President's Committee of Industrial Analysis, p. 123.
29. Roos, op. cit., p. 145.

30. National Industrial Recovery Act, Section 7(a).
31. United States National Recovery Administration. Trade Practice Study No. 56. Minimum Price Regulation Under Codes of Fair Competition, Taggart, Herbert. "Minimum Prices Under the NRA." Michigan Business Studies.
32. Lyon, et al., op. cit., p. 608.
33. National Recovery Review Board. First, Second, and Third Reports to the President of the United States.
34. Schlesinger, op. cit., pp. 174-175.
35. Roos, op. cit., p. 446.
36. Bellush, op. cit., p. 27.
37. Ibid., p. 67.
38. Ibid., p. 28.
39. Schlesinger, op. cit., p. 166.
40. Less than ten percent of code authorities included representatives of labor and only a fraction included representatives of consumers.
41. Bellush, op. cit., p. 47.
42. Ibid., p. 48.
43. Ibid., pp. 74, 96.
44. Ibid., pp. 68-69.
45. Ibid., p. 74.
46. Bernstein, Irving. Turbulent Years, pp. 184-185.
47. Roos, op. cit., p. 451.
48. Ibid., pp. 53-54, 472.
49. Rees, Albert. "On Equilibrium in Labor Markets," Journal of Political Economy, p. 309.
50. Lucas, Robert E., Jr. and Rapping, Leonard A. "Unemployment in the Great Depression: Is there a

- Full Explanation?," Journal of Political Economy, p. 186.
51. Bellush, op. cit., p. 45.
  52. Lyon, et al., op. cit., pp. 788-789.
  53. Ibid., p. 796.
  54. Terborgh, George. Price Control Devices in NRA Codes, p. 144.
  55. Roos, op. cit., p. 444.
  56. Filipetti, George and Vaile, Roland. The Economic Effects of the NRA: A Regional Analysis, p. 16.  
Hawley, Ellis W. "Antitrust on the Defensive: The American Movement for a Cartelized Economy, 1918-1933," Reviews in American History, p. 582.
  57. Schlesinger, op. cit., p. 172.
  58. Ibid., p. 173.
  59. Hawley, Ellis W. The New Deal and the Problem of Monopoly, pp. 131-132.
  60. Schlesinger, op. cit., p. 174.

CHAPTER II: THE IMPACT OF THE NATIONAL  
INDUSTRIAL RECOVERY ACT ON  
NOMINAL WAGES AND PRICES

This chapter, divided into five sections, analyzes the impact of the National Industrial Recovery Act (NIRA) on nominal wages and prices. Section I discusses alternative theories of the price movements during 1933-1935. Section II explicates the general model chosen to analyze wage and price behavior. Section III derives the equations to be estimated and describes the available data. In addition, the procedures for quantifying the economic effects of the NIRA are discussed. In Section IV, the results of the regression analysis are provided and interpreted. Section V calculates the quantitative impact of the codes on wages and prices and examines the mechanism by which the codes intervened in the economy.

## I

ALTERNATIVE EXPLANATIONS OF PRICES DURING  
1933 THROUGH 1935

The economic events following the precipitous economic downturn of 1929-1933 in the United States have never been adequately explained by existing economic theory. Though unemployment exceeded one-quarter of the labor force in 1933, and never fell below fourteen percent during the entire decade of the 1930's, nominal wage and prices steadily increased once the trough of the "Great Contraction" (March, 1933) had been passed. Tables II-1 and II-2 provide estimates of unemployment and wholesale prices for 1931 to 1935. Between May, 1933 and December, 1934, wholesale prices increased by more than twenty percent despite an unprecedented unemployment rate which exceeded twenty percent (according to all three estimates from Table II-2). It is the coincidence of massive unemployment and yet considerable inflation that has led some to conclude that labor markets will not allow wages to fall, no matter the extent of excess supply of labor.

There have been, at least, two types of explanations

TABLE II-1

## WHOLESALE PRICES: ALL COMMODITIES, 1931-1935

(1926 = 100)

	1931	1932	1933	1934	1935
January	77.0	67.3	61.0	72.2	78.8
February	75.5	66.3	59.8	73.6	79.5
March	74.5	66.0	60.2	73.7	79.4
April	73.3	65.5	60.4	73.3	80.1
May	71.3	64.4	62.7	73.7	80.2
June	70.0	63.9	65.0	74.6	79.8
July	70.0	64.5	68.9	74.8	79.4
August	70.2	65.2	69.5	76.4	80.5
September	69.1	65.3	70.8	77.6	80.7
October	68.4	64.4	71.2	76.5	80.5
November	68.3	63.9	71.1	76.5	80.6
December	66.3	62.6	70.8	76.9	80.9
Yearly Average:	73.0	64.8	65.9	74.9	80.0

Source: Bureau of Labor Statistics, Wholesale Prices.



TABLE II-2

## UNEMPLOYMENT RATES: 1931-1935

(Percent of Civilian Labor Force)

	LEBERGOTT SERIES	BUREAU OF LABOR STATISTICS	COEN SERIES
	(1)	(2)	(3)
1931	16.3	15.9	13.0
1932	24.1	23.6	18.8
1933	25.2	24.9	20.0
1934	22.0	21.7	21.5
1935	20.3	20.1	19.5

## Source:

- Column (1): Lebergott, Stanley. Manpower in Economic Growth: The American Record Since 1800. New York: McGraw-Hill, 1964, p. 12.
- Column (2): Lebergott, Stanley. "Labor Force, Employment, and Unemployment, 1929-1939: Estimating Methods." Monthly Labor Review. 66 (July, 1948): 51.
- Column (3): Coen, Robert M. "Labor Force and Unemployment in the 1920's and 1930's: A Re-Examination Based on Postwar Experience." Review of Economics and Statistics. 55 (February, 1973): 46-55.

for the anomalous price increases after March, 1933. First, the strain of unprecedented unemployment rendered labor markets incapable of performing their normal allocative function. The unemployed were capable of exerting less and less deflationary pressure on wages as the Depression proceeded. The most explicit account of labor market collapse is due to Albert Rees, who maintains that a "dual" market existed, in which the wages, both nominal and real, of those who retained their jobs were determined independent of those who were unemployed.<sup>1</sup>

Alternatively, labor markets are claimed to have behaved the same during the Depression, with twenty-five percent of the labor force unemployed, as they did in more normal times. No different specification of the determination of labor supply and labor demand is needed for the middle 1930's. In particular, Lucas and Rapping estimated a single annual model of labor market behavior (which emphasizes the role of expectations) for 1929-1965, which the authors claim "accounts for much, but not all, of the observed labor-market rigidity" during 1929-1939.<sup>2</sup>

A third alternative explanation, and the one to which the present analysis lends support, confirms part of both of the previous two contentions. Though labor markets during the Depression were not working as usual,

neither did the unemployed fail to exert deflationary pressures characteristic of more normal circumstances. It will be argued that the institution of economy-wide wage and price controls under the National Industrial Recovery Act, not unprecedented market imbalances, was the more important deterrent to price flexibility. The present chapter will attempt to quantify the impact of the National Industrial Recovery Act on nominal wages and prices. The impact of the codes on the extent and pace of recovery and on real wages will be analyzed in later chapters.

## A GENERAL MODEL OF WAGE AND PRICE BEHAVIOR

In analyzing the economic impact of the NIRA, two economic circumstances must be noted:

1) the minimum wage and price provisions were essentially economy-wide in coverage. Only a few industries were exempted and most of these exceptions were public utilities and non-profit institutions whose wage and price behavior were relatively isolated from the rest of the economy;

2) the codes were imposed during a period of substantial and pervasive unemployment. If coverage had been relatively incomplete, then explicit attention would have to be directed to the uncovered sectors. For example, increases in wages in sectors covered by the codes might have been offset, at least in part, by reductions in wages in the uncovered sectors as the newly unemployed were driven from the former into the latter.<sup>3</sup> If the supply of labor were elastic with respect to the wage rate, then the labor supply would have diminished as wage rates declined in the uncovered sector; hence the fall in wage rates in the uncovered sector would not fully offset the rise in wage rates in the covered sector.

However, when code coverage is economy-wide and where unemployment is pervasive, these considerations are not critical. First, the uncovered sector did not provide adequate opportunities for re-employment--at lower wages--for those unemployed in the covered sector. Second, with so much of the labor force unemployed for prolonged periods and desperate for additional income, the number who would voluntarily leave the labor force due to lower prevailing wage rates would be minimal.

The model chosen in this study to estimate the impact of the economy-wide wage and price controls instituted by the National Industrial Recovery Act is the familiar two-equation Phillips Curve system used extensively in studies of modern labor markets.<sup>4</sup> The first of the two equations specifies the determination of wages; the second, the determination of prices. The rate of wage inflation is generally taken to be a function of, among other arguments, the unemployment rate, wage (or price) expectations, and productivity change. Price-inflation is generally taken to be a function of, among other arguments, changes in unit costs (or, if constant shares are assumed, standard unit labor costs), the divergence between actual and the trend rate of productivity change, and disequilibrium in the product markets.

Phillips Curve specifications rely on the

assumption that wages will respond to the magnitude of imbalance between labor demand and labor supply. More precisely, a stable relationship must be assumed between the excess labor demand, often measured by the unemployment rate, and the resultant wage inflation. A popular, linearized version of the Phillips Curve system is:

$$\#1 \quad DW_t = a + b \cdot (1/U_t) + c \cdot (DP_t)^* + d \cdot (DQ_t)^*$$

$$\#2 \quad DP_t = e + f \cdot (DX_t) + g \cdot (DW_t)^* + h \cdot (DQ_t)^*$$

where, \* denotes expected values (some function of lagged values);  
 DP = rate of change of some price index;  
 DX = rate of change of some measure of product market imbalance (excess product demand);  
 DQ = some function of the rate of change of productivity (output per manhour);  
 t = time subscript

Solving for the reduced form equations (assuming, provisionally, that  $c = 1$ ):

$$\#3 \quad DP_t = A + B \cdot (1/U_t)^{**} + C \cdot (DQ_t)^{**} + D \cdot (DX_t)^{**}$$

$$\#4 \quad DW_t = I + F \cdot (DX_t)^{**} + G \cdot (DQ_t)^{**} + H \cdot (1/U_t)^{**}$$

where, \*\* denotes terms that may involve lagged values of the variable;

Furthermore, by substituting #1 into #2:

$$\begin{aligned} \#5 \quad DP_t = & A' + B' \cdot (DX_t) + C' \cdot (DQ_t)** + D' \cdot (1/U_t)** \\ & + E' \cdot (DP_t)* \end{aligned}$$

The essential characteristic common to modern investigations of the labor market is that the exogenous variables in the reduced form of the two-equation system (equations #3 and #4) are all real variables.<sup>5</sup> As Oi emphasizes, "monetary and fiscal policies only affect inflation through their impact on the time paths of these . . . real variables."<sup>6</sup> Policy is constrained to affect wages and prices through the demand variables in the price equation and the unemployment variable in the wage equation.

Though only real variables are exogenous in the Phillips Curve equations, the economic system, of which the Phillips Curve relationship is but one part, is capable of generating inflations that are purely monetary phenomenon. Appending the Phillips Curve system to a simple macro-economics system can provide a fully general economic structure from which the primary monetarist and non-monetarist propositions can all be derived as special cases. Milton Friedman has recently discussed just such a construction.<sup>7</sup> He first proposes an elementary aggregate model of an economy which encompasses both the

quantity theory and income-expenditure theories as special cases. With simplifying modifications, his macro-economic system is:

#6  $Y/P = f(Y/P, r)$ : Commodity market equilibrium

where,  $Y$  = nominal income;  
 $P$  = aggregate price index;  
 $r$  = real interest rate;

#7  $M = P \cdot g(Y/P, r + DP^*)$ : Money market equilibrium

where,  $M$  = nominal money supply;  
 $DP^*$  = expected inflation rate;

#8  $DP^*$  = some specified function of past rates of change of prices;

Friedman concludes that one more equation is needed in order to provide a complete solution for all variables.

He suggests three alternatives:

1)  $Y = Y^0$  (where  $Y^0$  is a constant), which Friedman characterizes as the simple quantity theory;

2)  $P = P^0$  (where  $P^0$  is a constant), which Friedman characterizes as the simple income-expenditure theory;

3) an equation to describe the short run adjustment to a change in nominal income between changes in prices and changes in output. The equation Friedman offers as his choice for the "missing equation" is:



$$\#9 \quad dP/dt = f(dY/dt, (dP/dt)^*, (d(Y/P)/dt)^*, Y/P, (Y/P)^*)$$

where, \* denotes expected values;

or, in specific linearized version:<sup>8</sup>

$$\#10 \quad d\log P/dt = (d\log P/dt)^* + a(d\log Y/dt - (d\log Y/dt)^*) \\ + b(\log(Y/P) - \log(Y/P)^*)$$

As Gordon has pointed out, the price-inflation equation derived from the Phillips Curve system (equation #5) is but a modification of Friedman's "missing equation" (equation #10).<sup>9</sup> Equation #5 can be generated from equation #10 by no longer assuming that  $E'$ , the coefficient on the expected price-inflation term in #5, is equal to unity, and by assuming that the rate of unemployment is related to the gap between current and expected real output. Imbedding #5 into the macro-economic system of equations #6 - #8, provides an economic structure capable of generating either monetarist or non-monetarist propositions. For example, if  $E'$  is assumed equal to unity, then the monetarist contention that inflations would be entirely monetary phenomenon would be verified. A permanent increase in the rate of growth of the money supply will not, after a period of transition, be reflected in a permanent change in unemployment. Whether the monetarist or non-monetarist

conclusions will be confirmed depends on the magnitude of the various parameters of the specified macro-economic structure. As Freidman argues, if, in equation #10,

$$a = 1 \quad \text{and} \quad b = \infty, \text{ then}$$

output will be constant as in the simple quantity theories.<sup>10</sup> The simple income-expenditure implication that prices rise only after full employment is reached will follow if,

$$a = 0 \quad \text{and} \quad b = 0 \quad \text{for } Y/P < (Y/P)^*$$

and

$$a = 1 \quad \text{and} \quad b = \infty \quad \text{for } Y/P > (Y/P)^* \quad 11$$

The choice of the two-equation Phillips Curve system does not, therefore, of itself preclude an agnostic position with respect to monetarist or income-expenditure macroeconomics.

## III

## DERIVATION AND INTERPRETATION OF REGRESSION EQUATIONS

To quantify the impact of the codes, a period during which the NIRA was not operative is needed for comparison. There are two major candidates: (1) the years 1929-1931 as the economy plummeted into depression; or (2) the years 1921-1923 following the severe 1920-1921 contraction.

The contiguous period prior to the NIRA offers the advantage that the structural changes in the economy not accounted for by the Phillips Curve system would be less significant than for noncontiguous periods. However, comparing the months before January, 1932 and after June, 1933 involves comparisons between two drastically different portions of the business cycle.

A possibly more relevant comparison would be the months (May, 1921 thru May, 1923) following the precipitous 1920-1921 contraction. If wage-price mechanisms are more similar during analogous, rather than diametrically opposite, portions of the business cycle, then recovery from the 1920-1921 contraction will serve as the appropriate comparison to the recovery from the Great

Contraction. These two business cycles were not, of course, entirely similar. Though the 1920-1921 downturn was severe, at no time was unemployment near the twenty-five percent rate of the latter contraction; furthermore, the recovery after 1921 was far more swift and extensive than the recovery following 1932. The disadvantage of using the recovery period from the 1920's as a comparison is that structural changes in the wage-price mechanism not accounted for by the Phillips Curve system may have occurred during the intervening decade.

However, the price behavior after 1920 did conform to the economist's theoretical models, so that a comparison of the early 1920's with the early 1930's should prove efficacious in understanding the coincidence of sizeable inflation and massive unemployment that characterized the latter experience. Tables II-3 and II-4 provide data that highlight the similarities and differences of the two periods. The dramatic decline in production in 1920 was accompanied by rapid deflation. In 1921 alone, prices fell by more than fifteen percent. Furthermore, as Table II-3 indicates, prices continued to decline, on average, through 1922. Prices were, approximately, no higher in May of 1923 (almost two years after the trough of the recession) than they were in July of 1922. During the periods when production was below its pre-

TABLE II-3

WHOLESALE PRICES: ALL COMMODITIES, 1921-1923  
(1926 = 100)

	1921	1922	1923
January	177.0		156.0
February	167.0		157.0
March	162.0		159.0
April	154.0		159.0
May	151.0		156.0
June	148.0		
July	148.0	155.0	
August	152.0	155.0	
September	152.0	153.0	
October	152.0	154.0	
November	149.0	156.0	
December	149.0	156.0	

Source: Bureau of Labor Statistics, Wholesale Prices.

TABLE II-4

RATES OF CHANGE OF WHOLESALE PRICES AND  
INDUSTRIAL PRODUCTION

Interval  (1)	Total Industrial Production (including utilities)  (2)	Wholesale Prices  (3)
1920'S		
Average for 1920---Average for 1921	-23.0 %	-36.8 %
Average for 1921---Average for 1922	+26.6	- 0.9
Average for 1922---Average for 1923	+19.5	- 4.0
January, 1920---December, 1920	-24.5	
January, 1920---March, 1921	-32.4	
January, 1921---December, 1921	+ 4.9	-15.8
July, 1922 ---December, 1922	+16.8	+ 0.6
January, 1923---May, 1923	+ 7.9	0.0
1930'S		
Average for 1929---Average for 1930	-16.8	- 9.3
Average for 1930---Average for 1931	-17.2	-15.5
Average for 1931---Average for 1932	-21.6	-11.2
Average for 1932---Average for 1933	+17.6	+ 1.7
Average for 1933---Average for 1934	+ 8.7	+13.7
Average for 1934---Average for 1935	+15.8	- 6.8
January, 1931---December, 1931	-14.9	-13.9
January, 1932---December, 1932	- 9.9	- 7.0
May, 1933 ---December, 1933	+36.1	+21.0
April, 1933 ---April, 1934	+ 2.2	+12.9

## Source:

Column (2): U.S. Board of Governors of the Federal Reserve System. Industrial Production 1959 Revision. Washington, United States Government Printing Office, 1960.

Column (3): Table II-1 and Table II-3.

recession peak, even as it was increasing, prices generally declined and displayed even moderate increases for only short durations.

Initially, the behavior of prices during the early 1930's was not dissimilar. The drastic declines in production were accompanied by rapid deflation. Only after the trough of the depression (March, 1933), do the two recovery periods appear disparate. Whereas in the 1920's, price inflation was either nonexistent or moderate during the economic recovery, from May to December of 1933, prices increased by over twenty percent. It is this inflation that needs to be explained.

In the present study, the wage-inflation equations are estimated from data from both the 1921-1923 recovery and the 1932 to 1935 experience. The specification of the wage-price mechanism used in this study is restricted by the available data. Because the NIRA was in effect for only two years, accurate estimation of its impact will require the use of monthly data. Unfortunately, reliable monthly series for the early 1930's exist for only a few economic variables: estimation of the Phillips Curve systems of the form used by modern labor-market investigators will not be possible. In addition, monthly data on individual industries will be pooled in order to obtain accurate estimations.

There are two sources of monthly data on average hourly earnings and manhours of labor by industry for this period:

- 1) the National Recovery Administration (the NRA-- the administrative agency of the NIRA) conducted surveys during the code period;

- 2) the National Industrial Conference Board (NICB) collected data both before and during the code period. For the analysis presented below, NICB data was used for fourteen manufacturing industries. For those industries, the definitions employed by the NICB and NRA (for the purpose of code application and administration) were congruent.

The wage equation in this study is an elementary Phillips Curve, in which the rate of change of average hourly earnings is specified to be a linear function of the inverse of the economy-wide unemployment rate. Wages are taken to be more closely related to economy-wide labor market conditions than to industry-specific employment conditions.<sup>12</sup> However, traditional methods of estimating unemployment by determining the number of unemployed persons would, for two reasons, provide a particularly misleading measure of the imbalance of labor demand and supply after the NIRA codes were initiated. First, reliable monthly, as opposed to annual, unemployment



estimates do not exist for the early 1920's and 1930's. Second, as previously detailed, the codes were designed, in part, to increase, for any given level of production and total hours of labor services, the number of persons employed. By limiting the maximum number of hours per week that individuals were allowed to work, the codes intended to "spread" the limited amount of work to more persons; hence, substantial underemployment was substituted for some of the unemployment. Measures of unemployment which estimate the difference between the number of persons in the civilian labor force and the number of persons who did any work during the reference period would tend to overestimate reductions in the excess supply of labor after May of 1933. As more and more NIRA industry codes were approved and as more persons, but perhaps no more labor hours, were employed, the Bureau of Labor Statistics (and other similar measures) estimates of unemployment would display spurious reductions in the excess supply of labor.

A more consistent barometer of the excess supply of labor in the short-run period after passage of the NIRA codes would be a measure of unemployed manhours-- not unemployed persons.<sup>13</sup>

A proxy variable for unemployment was constructed:

$$\#11 \quad U_t = 100a(L_t^{\max} - L_t)/L_t^{\max}$$

where,  $t$  = time subscript;  
 $U$  = proxy for the unemployment rate;  
 $L_t$  = manhours of input in month  $t$

$L_t^{\max}$  = maximum input of manhours with-  
 in previous five or subsequent  
 two years from month  $t$  (which-  
 ever value was higher);

$a$  = scale factor, such that the  
 yearly average of  $U$  in 1931 is  
 equal to Stanley Lebergott's<sup>11</sup>  
 unemployment rate.

To account for the role of expectations in wage determination, alternative specifications of the wage equation are estimated. Imposition of unprecedented economy-wide price and wage controls in the midst of a turbulent political and economic environment (the inauguration of the "100 days" of the New Deal legislation), suggests that price expectations would be changing rapidly and difficult to specify. Data on even the recent past cannot be considered to be a reliable indicator of the future in an economic environment that displays such dichotomous, sizeable shifts. Three alternative specifications of wage and price expectations are tried:

1) expectations are assumed to be immediately responsive to market changes and the current wage inflation is assumed to be linearly related to current price inflation;

2) expectations are assumed to adjust more slowly,

and past rates of price inflation are assumed to affect current wage inflation;

3) expectations of future price and wage changes are assumed incapable of influencing wages during periods of such massive excess labor supply, particularly when only short-run phenomenon are investigated. Under this assumption, all expectations terms are ignored.

Fortunately, it will be shown below that the quantitative impact of the codes is not sensitive to the omission or inclusion of price inflation terms in the wage inflation equation.

A lack of relevant data precluded estimation of the effect on wages of secular growth of labor productivity. Because the NIRA was law for only two years, the omission of secular productivity effects should not prove to be egregious.

Three alternative wage-inflation specifications are therefore estimated from pooled data from fourteen manufacturing industries for the 1921-1923 and 1932-1935 periods.

#### W EQUATIONS:

$$\#12 \quad W1 \quad DW_{it} = a + b \cdot (1/U_t) + c \cdot DP_{it}$$

where,  $i$  = industry index;  
 $t$  = time subscript (monthly index);

DW = rate of change of average  
hourly earnings;  
U = unemployment rate, previously  
defined;  
DP = rate of change of wholesale  
prices

$$\#13 \quad W2 \quad DW_{it} = a + b \cdot (1/U_t)$$

$$\#14 \quad W3 \quad DW_{it} = a + b \cdot (1/U_t) + c \cdot DP_{it} + \text{terms involving lagged values of } DP_{it}$$

The price-inflation equation used in this study is analogous to "full cost" pricing models in which prices are determined by unit variable costs multiplied by a markup factor:<sup>14</sup>

$$\#15 \quad P_{it} = M_{it} \cdot (ULC_{it} + UKC_{it})$$

where, P = wholesale price;  
M<sub>it</sub> = markup factor;  
ULC = unit labor costs of production;  
UKC = unit non-labor costs of production;

and where:

$$\#16 \quad ULC = (W_{it} \cdot L_{it}) / X_{it}$$

where, W = average hourly earnings;  
L = manhours of labor input;  
X = output;

Adding a constant term and assuming factor shares constant:

$$\#17 \quad DP_{it} = a + b \cdot DULC_{it} + c \cdot DUKC_{it} + d \cdot DM_{it}$$

where, DULC = rate of change of ULC;  
 DUKC = rate of change of UKC;  
 DM<sub>it</sub> = rate of change of M<sub>it</sub>;

The markup of prices over costs, M<sub>it</sub>, is assumed to be responsive to market conditions (industry excess demand):

$$\#18 \quad M_{it} = b \cdot (\text{Excess Demand}_{it})$$

Because there are monthly data, by industry, for only prices and manhours, but not output or non-labor costs, additional restrictive assumptions are needed:

(A) prices are assumed to be a markup on only the costs of labor. Since there is evidence that capital costs are relatively low and did not vary greatly during the 1933-1935 period, the bias of considering only labor costs may not be extensive. Short-term interest rates, for example, remained at a stable, but low, level well past December, 1935;

Two proxies for excess demand are used:

$$\#19 \quad (B) \quad M1_{it} = L_{it} / L_{it}^{\max},$$

which serves as an industry specific-measure; and

$$\#19a \quad (C) \quad M2_t = \text{PROD}_t / \text{PROD}_t^{\max},$$

where, PROD = Federal Reserve Board  
 Index of Industrial Production;

PROD<sup>max</sup> = maximum value of PROD during either previous five of subsequent two years from month t (whichever is larger);

$M2_{it}$  would be appropriate if either: a) industry markups are more closely related to aggregate, rather than industry-specific, demand pressure; b) individual industry and economy-wide output changes are highly correlated.

Each of the following two further restrictions will be successively utilized to create two alternative proxies for unit labor costs:

(D) output is assumed constant. Changes in ULC are therefore equal to observed changes in  $(W \cdot L)$  divided by the constant output:  $\Delta (W \cdot L) / X = \Delta (W \cdot L) / X_0$ , where  $X_0$  is the fixed output level. In the aftermath of the Depression, output did not increase at a steady pace until well past 1935;

(E) output per manhour is assumed constant:  
 $(W \cdot L) / X = (W) (L/X)_0$ , where  $(L/X)_0$  is constant.

Three alternative price equation specifications are estimated:

#### P EQUATIONS:

First, combining assumptions A, C, and D yields:

$$\#20 \quad P1 \quad DP_{it} = a + b \cdot DM2_t + cDZ_{it}$$

where,  $DM2_t$  = rate of change of  $M2_t$ ;

$DZ_{it}$  = rate of change of  $(W_{it} \cdot L_{it})$ ;

Second, combining assumptions A, C, and E yield:

$$\#21 \quad P2 \quad DP_{it} = a + b \cdot DM2_t + c \cdot DW_{it}$$

Third, combining assumptions A, B, and E:

$$\#22 \quad P3 \quad DP_{it} = a + b \cdot DMI_{it} + c \cdot DW_{it}$$

where,  $DMI_{it}$  = rate of change of  $M1_{it}$

Together, the wage-inflation equation W (either W1, W2, or W3) and price-inflation equation P (either P1, P2, or P3) comprise the wage-price mechanism of the economy.

To determine if the NIRA codes affected the parameters of the Phillips Curve system, equations W and P are estimated for a merged sample in which data from 1921-1923 and 1932-1935 are combined. For these merged sample estimations, two separate dummy variables were added to both the wage-inflation and price equations. The first dummy (NIRA) is unity for those months following the passage of the NIRA legislation (June, 1933 through December, 1935); zero otherwise. The second dummy variable (ENDNIRA) is unity for those months after the codes were declared unconstitutional (June, 1935 through December 1935); zero otherwise.

The inclusion of the NIRA (ENDNIRA) dummy variable

in the wage inflation equation assumes that the code provisions shift the constant term of the Phillips Curve equation: passage (elimination) of the codes is assumed to increase (decrease) the inflation rate for any given level of unemployment. In the price inflation equation, inclusion of the NIRA (ENDNIRA) dummy variable assumes that the NIRA price controls contributed to an individual industry's monopoly power and, therefore, to its rate of markup over costs.

The NIRA codes contributed to wage inflation through, primarily, two mechanisms. First, as individual industry codes were successively approved, the wages of employees earning below the minimum rate were raised. Second, normal competitive mechanisms as well as explicit pressure on employers by the National Recovery Administration increased wages of those employees who were already earning above the minimum wage rate in order to restore, at least in part, the wage differentials that persisted prior to the NIRA.<sup>15</sup> Hence, the institution of the NIRA codes led to a progression of wage increases--a shift in the rate of inflation--following initial code approval and not just a once-and-for-all increase in the wage rate. Let,

$W_{i,j,t}$  = average hourly earnings in industry  $i$ , for employees with skill level  $j$ , in period  $t$ ;



where,

$$i = 1, 2, \dots, M; \quad j = 1, 2, \dots, S; \quad t = 1, 2, \dots, T$$

$L_{i,j,t}$  = Hours of labor services in industry  $i$  by employees with skill level  $j$  in period  $t$ ;

$W_t$  = economy-wide average hourly earnings in period  $t$ ;

$L_t = \sum_i \sum_j L_{i,j,t}$  = aggregate hours of labor services in period  $t$ .

and assume:

- 1) all employees in a given skill level earn the same average hourly earnings;
- 2) all employees in a given industry earning below the minimum wage rate specified by the industry NIRA code are of skill  $j = 1$ ;
- 3) wage increases in one industry do not cause similar wage increases in other industries (because the original wage increases are mandated by law and not the result of competitive forces);
- 4) wages do not change for reasons other than the NIRA codes.

All of these assumptions can be dropped and are made only for simplification.

Then,

$$\#24 \quad DW_t = \sum_i \sum_j \frac{((DW_{i,j,t})(L_{i,j,t}))}{L_t}, \text{ for } DL_{i,j,t} = 0$$

where,  $DW_t$  = rate of change of  $W_t$   
 $DL_{i,j,t}$  = rate of change of  $L_{i,j,t}$

Let,  $\overline{DW}_{i,1,r_i}$

represent the change in wage rate in industry  $i$  for employees who were earning below the minimum wage rate ( $j = 1$ ) mandated by an NIRA code approved in period  $r_i$ .

The wages of those employees who earn above the minimum adjust to restore, at least in part, the original wage differentials:

$$\#25 \quad DW_{i,j,t} = (B_{i,j,t-r_i}) (\overline{DW}_{i,1,r_i}) \text{ for } j \neq 1$$

where,

$B_{i,1,t-r_i} = 1$  for  $t = r_i$ , which restates that

$\overline{DW}_{i,1,r_i}$  is the rate of change of wages for employees below the minimum ( $j = 1$ ) upon code approval for industry  $i$ ;

$B_{i,1,t-r_i} = 0$  for  $t \neq r_i$ , which implies that the wage rate of employees who were earning below the minimum ( $j = 1$ ) does not continue to change after initial code approval.

and,

$$\sum_t B_{i,j,t-r_i} = 1, \text{ if the wage differential between employees with skill } j = 2, 3, \dots \text{ or } M \text{ and employees with skill } j = 1 \text{ is fully restored to the pre-NIRA level.}$$

Substitution (#25) into (#24):

$$DW_t = \sum_i \sum_j \left[ \frac{((B_{i,j,t-r_i}) (\overline{DW}_{i,1,t-r_i})) (L_{i,j,t})}{L_t} \right]$$

Let,  $r_i < t$ , for those industries  $1, 2, \dots, N$  whose codes were previously approved

$r_i > t$ , for those industries  $N + 1, \dots, M$  whose codes are approved in the current period,  $t$

Then,

$$\#26 \quad DW_t = \sum_{i=1}^N \sum_{j=2}^S \left[ \frac{((B_{i,j,t-r_i}) (\overline{DW}_{i,1,t-r_i})) (L_{i,j,t})}{L_i} \right]$$

$$+ \sum_{i=N+1}^M \left[ \frac{(\overline{DW}_{i,1,t}) (L_{i,t})}{L_t} \right]$$

From equation (#26), the two continuing sources of inflation from NIRA code approval are highlighted:

1) the second term on the right hand side of equation #26 represents the contribution to inflation due

to wage rate increases granted to employees earning below the minimum rate mandated by newly approved codes;

2) the first term on the right hand side of equation #26 represents the contribution to inflation due to wage-rate increases for employees earning more than the minimum rate. These latter wage-rate increases occur in each industry in the periods following code approval; the rate at which such wages are increased are governed by the magnitude of the  $B_{i,j,t-r_i}$ 's.

Of course, if wage rates in the separate industries are interdependent, then equation #26 will be a more complicated expression. However, the NIRA codes would continue to exert an inflationary impact beyond the period of initial industry code approval.

Similarly, the NIRA codes contributed to continuing price inflation by:

1) contributing, as described above, to wage inflation;

2) increasing, through newly approved codes, the monopoly power of industry members which, over time, allowed prices to be increased relative to costs. Subsequently, these price increases would spread, over time, throughout the economy.

Within the context of the system specified by equations W and P, there are two primary means by which

the NIRA codes could influence the economy's wage and price dynamics. First, the coefficients, including the constant term, of one or the other equation could have been altered (which includes the possibility that the entire structure of the equation has been altered). Second, the codes could have affected the system's exogenous variables. If, for example, the codes affected the time path of the unemployment rate, wages would have been affected in the manner specified by the wage-inflation equation. The altered time path of wages would, in turn, influence prices in the manner specified by the price-inflation equation. If the quantitative impact of the NIRA codes is to be appropriately measured by the magnitude of the coefficient associated with the NIRA and ENDNIRA dummy variables included in the Phillips Curve equations, two assumptions must be valid:

- 1) coefficients other than the constant term in the W and P equations could not have been significantly altered by the codes;
- 2) the time path of the system's exogenous variable could not have been significantly influenced by the codes.

The impact of the codes on the coefficients of the Phillips Curve system will be analyzed in the present chapter; the impact of the codes on, in general, the path

of the recovery from the Depression and, in particular, on the path of the system's exogenous variables will be examined in a later chapter. The remainder of the present chapter will proceed under the assumption that the exogenous variables were not significantly altered by the NIRA. Alternatively, the present chapter can be interpreted as estimating what wages and prices would have been if the same level of unemployment had prevailed but the NIRA codes had not been approved.

To test whether the entire structure of the Phillips Curve equations were affected by the NIRA, separate estimations were performed for the period prior to the NIRA's passage (including the 1921-1923 recovery) and the period following its passage. Only if statistical tests cannot reject the hypothesis that the two sets of parameter estimates are identical would assumption 1) be viable. Alternatively, tests whether particular coefficients are significantly different in the post-NIRA period will also be performed.

## INTERPRETATIONS OF REGRESSION RESULTS

The results of estimating the wage and price inflation equations are provided in Table II-5.<sup>16</sup> Focusing first on wage-inflation equation, a comparison of equations T1 and T2 suggests that the presence of the current rate of price inflation does not significantly alter the estimates of the parameters associated with the variables that are critical to the determination of the impact of the codes--the NIRA dummy and the unemployment rate. These coefficients are similarly invariant to other specifications of wage expectations (which include, for example, lagged values of price inflation).

Examination of the wage-inflation regressions presented in Table II-5 suggests that the unemployed continued--even after 1932--to have a significant deflationary impact but that the NIRA codes had a more than offsetting inflationary impact.

The slope coefficient of the wage-inflation Phillips Curve--the coefficient associated with the unemployment variable--measures the deflationary impact of unemployment. The estimates from Table II-5 suggest

TABLE II-5

EQ. #	EQ. TYPE	DEPEN- DENT VARIABLE	CON- STANT	NIRA DUMMY	END- NIRA DUMMY	(1/U)	DP	USHIFT	DW	DM2	SE
W EQUATIONS:											
MDV = 0.002											
T1	W2	DW	-.015* (.002)	.022* (.002)	-.011* (.003)	.090* (.012)					.027
T2	W1	DW	-.014* (.002)	.020* (.002)	-.011* (.003)	.085* (.011)	.127* (.026)				.026
T3	W2	DW	-.015* (.002)	.021 (.016)	-.012* (.005)	.090* (.012)	.013 (.260)				.027
P EQUATIONS											
MDV = .0006											
T4	P2	DP	-.003 (.002)	.007* (.003)	-.003 (.004)				.206* (.040)	-.002 (.018)	.033



TABLE II-5  
(continued)

## NOTES:

Sample Period for  
Regressions: March, 1921 - December, 1921; July,  
1922 - May, 1923; December, 1931-  
December, 1935.

Standard Errors are in Parenthesis.

- \*: Denotes T statistics which are significant at the 5% confidence level.
- SE: standard error of regression.
- MDV: mean of dependent variable.
- NIRA: dummy variable which equals 1 for June, 1933 - December, 1935, 0 otherwise.
- ENDNIRA: dummy variable which equals 1 for June, 1935 - December, 1935; 0 otherwise.
- DP: monthly rate of change of wholesale prices (decimal).
- DW: monthly rate of change of average hourly earnings (decimal).
- DM2: monthly rate of change of (PROD/PROD (max))), where PROD is the Federal Reserve Board Index of industrial production and PROD(max) is the maximum value of PROD in either the previous five or subsequent 2 years from a particular month. DM2 is decimal.
- 1/U: defined in text.
- USHIFT:  $(1/U) \cdot (NIRA) = (1/U)$  for June, 1933 - December, 1935; 0 otherwise.

that for the entire sample period (1921-1923 months as well as 1932-1935), a one percent increase in unemployment would produce an approximately one-third of one percent change in the rate of wage inflation (for unemployment rates in the range of those experienced during the early 1930's).

More importantly, the hypothesis that the slope parameter was unchanged after passage of the NIRA cannot be rejected. In equation T3 of Table II-5, the variable USHIFT takes a value equal to  $(1/U)$  after passage of the NIRA and equal to zero otherwise.

Prior to the passage of the NIRA:

$$DW = a + b \cdot (1/U)$$

Following passage of the NIRA:

$$DE = a + a'(\text{NIRA}) + a''(\text{ENDNIRA}) + b \cdot (1/U) + b'(1/U)$$

If the unemployed exerted a significantly less deflationary impact after passage, then  $b'$  can be expected to be significantly different from zero and negative in sign. However, the coefficient associated with USHIFT in equation T3 is not significantly different from zero--and is even positive in sign.<sup>17</sup> In addition, the magnitude of the coefficient is small relative to the coefficient of the  $(1/U)$  term. There is, therefore, no statistical evidence that the labor markets became any less capable of exerting deflationary pressure in the middle 1930's than

previously. The effect of the unemployed on wages in the aftermath of the Great Contraction, during a time of anomalous price movements was approximately the same as that which prevailed during two previous periods (1932 and 1921-1923) when price changes mirrored output changes in a more expected fashion.<sup>18</sup> No statistical support is found for Rees's hypothesis of a "dual" labor market in which the wage of those employed is independent of those who are still wanting for jobs.

Many economists and historians have cited the Great Depression as proof that sizeable deflation would not accompany even massive unemployment. Besides Albert Rees, Franco Modigliani has expressed this same skepticism in his recent Presidential Address before the eighty-ninth meeting of the American Economic Association:

And whether, given an unemployment rate significantly and persistently above the noninflationary level, the rate of change of wages would, eventually, tend to turn negative and decline without bound or whether it would tend to an asymptote is a question that I doubt the empirical evidence will ever answer. The one experiment we have had--The Great Depression--suggests the answer is negative. . . .<sup>19</sup>

And historian Arthur M. Schlesinger, Jr. (convinced by the analysis of Berle and Means) also argues in his major study of the New Deal that prices were rigid in this period and no longer subject to market conditions:

The hard fact was that the cause of price rigidity went a great deal deeper than anything written by trade associations into NRA codes, and that its cure was beyond the power of NRA to achieve.<sup>20</sup>

Finally, economist R. J. Gordon proclaims:

. . . an important criticism of the NRA [Natural Rate Hypothesis] has been its apparent lack of validation in recession and depression episodes . . . a period during which U (unemployment) remains above UN (natural rate of unemployment) for a substantial period should be characterized by an accelerating decline in p (inflation rate). But during the Great Depression the unemployment rate remained above 8.5 percent for twelve straight years in the United States without the slightest sign of such an acceleration.<sup>21</sup>

The evidence presented in this chapter contradicts all of these presumptions.

Equation T2 was also estimated for two other sample periods:

1) PRECODE PERIOD: March, 1921 to December, 1921, July, 1922 to May, 1923, and December, 1931 to May, 1933;

2) POSTCODE PERIOD: June, 1933 to December, 1935.

The NIRA and ENDNIRA dummy variables were included in equation T2 for these separate regressions where they were appropriate. A test of the equality of the entire set of coefficients common to these separate regressions (not just the coefficient associated with the unemployment

rate variable, as discussed above) similarly fails to reject the hypothesis that the two sets are identical. Again, this is suggestive evidence that the wage-inflation mechanism was stable.<sup>22</sup>

The previous results suggest that if the NIRA did influence the labor market, it did so by affecting the constant term of the wage-inflation equation and not the slope parameters. The quantitative impact of the initiation of the codes is appropriately measured by the coefficient associated with the NIRA dummy variable in equation T1 or T2. Similarly, the quantitative impact of removing the codes will be appropriately measured coefficient associated with the ENDNIRA dummy variable.

Examination of the price-inflation process confirms the stability of market mechanisms after the trough of the Depression. Neither the massive unemployment nor imposition of the NIRA significantly altered the coefficients of the price inflation process (other than the constant). For example, the hypotheses that the coefficients associated with the wage inflation (DW) and excess demand (DM2) variables in the price inflation equation were equal in the precode and postcode periods cannot be rejected.<sup>23</sup>

The data, once again, suggests that the NIRA (ENDNIRA) dummy variables will appropriately measure

the quantitative impact of the initiation (elimination) of the codes.

The NIRA dummy as used in both the wage and price inflation equations is unity, for all the individual industries, for those months during which the NIRA was law. However, the individual industries applied, and were granted, their codes separately during the course of the year and one-half following the passage of the NIRA. Even the "blanket code," officially known as the President's Re-employment Agreement, which anticipated many of the wage provisions of the subsequent codes, did not become effective until the summer of 1933. Experimentation with an industry specific NIRA dummy (unity code months of the specific industry; zero otherwise) did not tract the shift of wages or prices as well as the common dummy that was actually used.

To examine this phenomenon further, residuals from the W2 wage and P2 price equations were examined. For each industry, the residual for the month during which its code was passed into law was isolated. If the date of code passage had had a significant impact on wages, then there would be a preponderance of positive residuals from a regression which made no allowance for such an effect (positive residuals occur when the actual change in wages exceeds the change in wages imputed by the regression). In fact, a majority (fifty-five

percent) do have positive residuals for the month of its individual code passage. However, for less than fifteen percent of these is the residual positive by more than one standard error of the regression. Industries raised their wage offers before they were legally required to do so and even prior to the public pressure to do so that accompanied the President's Re-employment Act. Though the preponderance of positive residuals on the date of code passage suggests that wages might have been influenced by industry specific events, the bulk of the wage changes seem to be a response to the economy-wide event of Congressionally authorized wage and price controls. This response would be consistent with labor markets that were functioning--to the extent that widely varying wage behavior across individual dual industries could no more occur in the early 1930's than it could today.

Examination of the same residuals for P2 suggests slightly different behavior for prices than was true for wages. A greater majority of the industries display positive residuals (sixty-one percent) and more of these (twenty-five percent) are of a magnitude greater than one standard error of the regression. Though once again, the initial, significant upward movement of prices occurred prior to industry specific code passage, the

data do suggest that the industry specific events had more of an influence on prices than wages. It would seem that the legal sanctioning of price collusion helped those industries which otherwise might not have been able to maintain an effective cartel. Between the time that the NIRA was passed into law and the individual industries were granted their own codes, prices were increased for at least two reasons. First, wages were rising, as previously noted; second, the NIRA sanctioned the development of cartels. Cartel agreements were drawn up, and in many instances, put into effect before legally sanctioned. However, the number of positive residuals on the date of industry specific code passage might indicate that legal sanction did make these informal cartel agreements more effective.



QUANTITATIVE AND QUALITATIVE IMPACT OF THE NRA  
CODES ON NOMINAL WAGES AND PRICES

To determine the effect of the NIRA, the above analysis provides justification for focusing on the NIRA and ENDNIRA dummy variables in the wage and price equations estimated for the entire sample period. The amount by which nominal values were affected by the NIRA codes can be ascertained by manipulating the parameter estimates of these equations.

Using W1 and P2 (equations T2 and T4 from Table II-5) and dropping industry and time subscripts:

$$\begin{aligned} \#27 \quad W1 \quad DW &= 1.014 + (.020)NIRA - (.011)ENDNIRA \\ &+ (.127)DP + (.085)(1/U) \end{aligned}$$

$$\begin{aligned} \#28 \quad P2 \quad DP &= -.003 + (.007)NIRA - (.003)ENDNIRA \\ &+ (.206)DW - (.002)DM2 \end{aligned}$$

Substituting #28 into #27 and letting  $DM2 = 0$ :

$$\begin{aligned} \#29 \quad DW &= -.0147 + (.0215)NIRA - (.0115)ENDNIRA \\ &+ (.08755)(1/U) \end{aligned}$$

Initiation of the codes increased wages by:

#30 Change in DW = .0215 = 2.15% per month

The annual increase in wages due to code initiation:

#31 Annual Wage change = 25.8% per year.

Nullification of the codes decreased the wage level attained during the period of the NIRA by:

#32 (from equation #29) Change in DW = -1.15% per month

The annual decrease in wages due to code nullification was:

#33 Yearly wage change =  $(1.15) \cdot (12) = -13.8\%$

Substituting #27 into #28:

#34 
$$DP = .006 + (.0117)NIRA - (.00549)ENDNIRA + (.0181)(1/U)$$

Initiation of the codes increased prices by:

#35 Change in DP = 1.17% per month

The annual increase in prices due to code initiation was:

#36 Annual Price Change = 14.0% per year

Nullification of the codes decreased prices by:

#37 Change in DP = -0.549% per month

The annual decrease in prices due to code nullification was:

#38            Annual Price Change = -6.59% per year.

If the wage-inflation equation without the price term (W2, or equation T1 from Table II-5) is used in the above calculations instead of W1, the results are as follows:

- 1) initiation of the codes increased wages at a 25.8% annual rate and prices at a 14.0% annual rate.
- 2) nullification of the codes decreased wages at a 13.7% annual rate and prices at a 6.5% annual rate from the rates that prevailed during the period of the NIRA legislation.

The codes, then, were responsible for more than a fifty percent increase in wages and an approximately thirty percent rise in prices by the time of the Schechter decision (the Supreme Court decision which declared the NIRA unconstitutional in May of 1935). In the absence of the NIRA, average hourly earnings in manufacturing would have been less than thirty-five cents per hour by May, 1935 instead of its actual level of almost sixty cents (assuming unemployment to have been unaltered). Similarly, the wholesale price index would have been less than sixty-two (for 1926 = 100) instead of the actual value of 80.2.

Consideration of both the wage and price inflation equations suggests the following conclusions:

1) the labor markets in the aftermath of the Depression were not dysfunctional. The traditional trade-off of unemployment and wage changes was essentially maintained;

2) the wage inflation equation was significantly altered by the institution of the NIRA codes. Though the slope was stable, the constant term was dramatically increased. Wages were driven upward by the imposition of minimum wages and the pressure on employers to similarly increase wages above the minimum;

3) prices in the early thirties were displaced upward for two reasons. First, wages were rising, as noted above; second, the codes conferred increased monopoly power to industries by promoting the development of cartels and, more generally, collusive price setting. P2 suggests that the wage-independent impact on prices due to the codes approached nine percent per year.

The manner in which the NIRA codes intervened in the economy's wage-inflation mechanism, and the economic implication of such intervention, is best described diagrammatically.

If the wage-inflation equation,  $W_2$ , is plotted, with  $(1/U)$  on the horizontal axis and  $DW$  on the vertical

axis, then the initiation of the codes served to dramatically increase the intercept (by the amount of the NIRA dummy variable). See Chart II-1. If unemployment were sufficiently large, and, therefore,  $(1/U)$  sufficiently small, the economy would be operating in the vicinity of the vertical axis. The constant term in W2 suggests that, in the absence of the codes, wages would be deflating, and, in the limit, at a rate of  $-1.51\%$  per month. The effect of the NIRA codes was to shift the entire wage-inflation curve upwards until its intercept with the vertical axis was positive. Therefore, even with massive unemployment (hence the economy operating relatively near the vertical axis) wages would no longer be declining. On the contrary, wages would be increasing, in the limit, at a rate of  $-1.51\% + 2.2\% = +0.7\%$  per month. This positive wage inflation, which accompanied the extensive unemployment, is precisely the observed anomalous market behavior that has been so puzzling. The upward shifting of the Phillips Curve effectively obscured the--invariant--negative slope.

Table II-5 provides several more insights into the wage and price mechanisms of the 1930's:

- 1) when the NIRA controls were declared unconstitutional in May, 1935, wage inflation was significantly reduced, though by only one-half the amount by which wages

CHART II-1

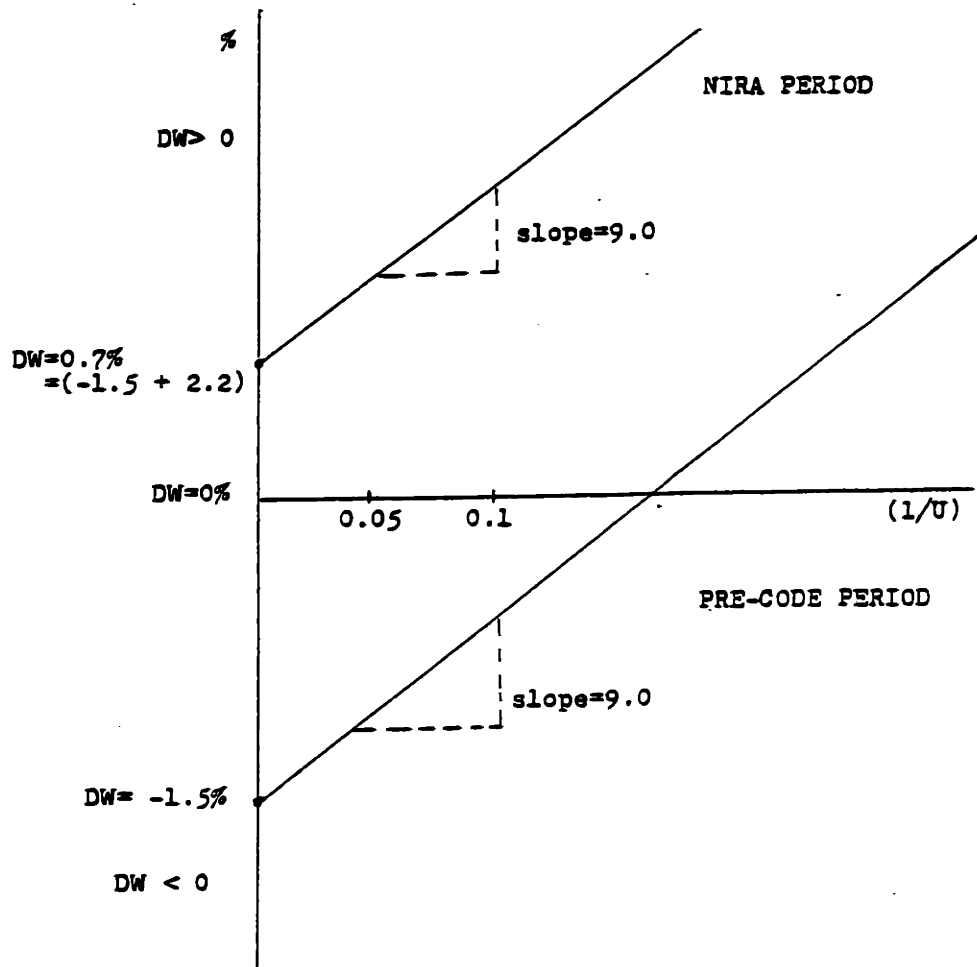
GRAPH OF THE WAGE-INFLATION PROCESS

For DW in decimal units:

$$DW = -0.015 + (0.022)NIRA - (0.011)ENDNIRA + (0.090)(1/U)$$

For DW in percent:

$$DW = -1.51 + (2.15)NIRA - (1.14)ENDNIRA + (9.03)(1/U)$$



were originally increased (the ENDNIRA estimated coefficient is over one percent per month in comparison to the NIRA estimated coefficient of approximately two percent per month--in either the W1 or W2 equations). In the seven months following the Schechter decision, wages declined by more than seven percent more than they would have otherwise. Labor's market power was, as yet, insufficient to protect all of their NIRA gains;

2) the end of the NIRA controls did not produce as significant a decline in prices as in wages. Not only is the coefficient on the ENDNIRA dummy variable statistically insignificant in P2 (the price inflation equation), but also prices are revealed to have declined by less than one-third of the amount by which wages fell following code elimination. The development of cartels and, in general, increased monopolization of industries, did not prove fragile in the face of decontrol. Only a slight erosion of markups followed the withdrawal of legal sanction for collusive pricing.

It should be noted that there is, quite possibly, a significant bias to the amount of wage flexibility suggested by the data collected by the NRA or NICB. If, as Robert Hall emphasizes, labor markets rely on adjusting the quality of workers for given jobs at given wages rather than adjusting the wages themselves, the NRA data

will seriously underestimate the extent to which actual wages (for given employee attributes) have been reduced.<sup>24</sup> To cite an extreme situation: suppose the wage attached to all jobs in a firm were fixed. If, furthermore, in periods of massive unemployment the firm was able to replace all of its employees with workers, presently unemployed, with higher productivities than those currently employed. NRA surveys of the wages of the firm's employees would indicate no change and wrongly suggest a complete rigidity of wages. In fact, wages for employees of given skills have been reduced: the labor markets would be providing far more wage flexibility than the survey data would indicate.

There might also be overestimation of wage increases and underestimation of price reductions during the NIRA period if employers reported compliance with either the industry's NIRA code or with the President's Re-employment Agreement, but, for competitive purposes, remained in violation of the codes or PRA. The extent to which employers did not raise all wage rates above the minimum, or did not subsequently raise wages above the minimum to restore wage differentials to their pre-NIRA level, or covertly cut prices below the specified minimum prices in the NIRA codes could not be determined. Any such code violations or disparity between the actual



and reported compliance would have rendered the codes less inflationary than the estimates provided in this chapter.

Several issues remain unresolved. By promoting wage and price inflation, the NIRA codes vitiated possibly corrective deflation that would otherwise have accompanied the extensive unemployment. The inflation might have acted as an economic depressant by, for example, reducing the real value of money-fixed assets. Alternatively, the NIRA might have had a salutary effect on recovery by either increasing real wages or favorably influencing the economic expectations of consumers and employers. In Chapter IV, the quantitative importance of the several possible mechanisms by which the codes could have affected the path of recovery from the Depression will be examined.

## CHAPTER II FOOTNOTES

1. Rees, Albert. "On Equilibrium in Labor Markets," Journal of Political Economy, p. 309. Also, Rees, Albert. "Real Wages and Inflation: Rejoinder," Journal of Political Economy, p. 192; and Rees, Albert. "Wage Determination and Involuntary Unemployment," Journal of Political Economy, pp. 143-153.
2. Lucas, Robert E., Jr. and Rapping, Leonard A. "Unemployment in the Great Depression: Is There a Full Explanation?" Journal of Political Economy, p. 186.
3. Welch, Finis. "Minimum Wage Legislation in the United States," Economic Inquiry, pp. 285-318.
4. Oi, Walter Y. "On Measuring the Impact of Wage-Price Controls: A Critical Appraisal." And, Gordon, Robert J. "On Measuring the Impact of Controls: A Comment (On Oi, 1974); Phillips, A. W. "The Relation Between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1861-1957," Econometrica, pp. 283-299; Friedman, Milton. "A Theoretical Framework for Monetary Analysis," Journal of Political Economy, pp. 193-238; Lucas, Robert E. Jr. and Rapping, Leonard A. "Price Expectations and the Phillips Curve," The American Economic Review, pp. 342-350; Lucas, Robert E., Jr. and Rapping, Leonard A. "Real Wages, Employment, and Inflation," Journal of Political Economy. pp. 721-754.
5. Gordon, Robert J. op. cit.
6. Oi, op. cit., p. 14.
7. Friedman, Milton, op. cit.
8. Ibid., p. 224.
9. Gordon, Robert J., op. cit., pp. 2-6.
10. Friedman, Milton, op. cit., pp. 224-225.
11. Ibid., pp. 224-225.
12. Alternative specifications in which industry specific wage changes were regressed on industry-specific

unemployment rates resulted in larger standard errors than for those specifications reported below. The proxy variable used to measure the industry-specific unemployment rates is defined similarly to the measure of the economy-wide unemployment rate used in the regressions reported below.

13. This study, therefore, estimates unemployment during the 1930's in a manner far different than the recent attempts of Michael Darby (Journal of Political Economy, February, 1976, pp. 1-16) to correct previous (Bureau of Labor Statistics and Stanley Lebergott) measures which included employees of governmental contracyclical programs as unemployed.
14. Eckstein, O. and Fromm, G. "The Price Equation," pp. 1159-1183.
15. Section IV, Chapter I of this study.
16. Correction for first order serial correlation has been made for these ordinary least squares regressions.
17. All statements referring to the significance of parameter estimates or other statistical tests all assume a five percent confidence level.
18. The movements in prices and output during the early 1920's and early 1930's will be discussed below.
19. Modigliani, Franco. "The Monetarist Controversy, of Should We Foresake Stabilization Policies?", The American Economic Review, p. 8.
20. Schlesinger, Arthur M., Jr. The Coming of the New Deal, p. 172.
21. Gordon, Robert J. "The Theory of Domestic Inflation," p. 130.
22. Responsibility for rejecting the hypothesis is due, in part, to the large standard errors associated with these regressions. The use of monthly data to account

for rates of change of wages for these separate, small subsamples of data does not allow for more accurate estimation.

23. In equation T4, the coefficient associated with the variable measuring the rate of change in excess demand is negative, contrary to what economic theory would suggest. However, the coefficient is not significantly different from zero, at the five percent confidence level. Furthermore, the magnitude of the coefficient is not considerable. In alternative specifications of the price inflation equation, the coefficient associated with DM2 was generally positive, but never significantly so.
24. Hall, Robert E. "The Process of Inflation in the Labor Market," Brookings Papers on Economic Activity, pp. 343-393.

CHAPTER III: DISTRIBUTIONAL IMPACTS OF  
THE NATIONAL INDUSTRIAL  
RECOVERY ACT

This chapter, divided into nine sections, analyzes the distributional impacts of the National Industrial Recovery Act. Section I introduces the findings of previous studies and previews the findings of subsequent sections of this chapter. Section II estimates the effect of the codes on the real purchasing power of labor. Section III reviews the evidence of the effect of the maximum hours provisions of the industrial codes on employment. Section IV discusses the success of the codes in narrowing the pay differentials among industries. Section V analyzes the effect of the codes on the differential in earnings and hours worked between unskilled workers and semi-skilled and skilled workers. Section VI estimates the impact of the codes on the differentials in earnings and hours worked per week between male and female workers. Section VII discusses the advantages that concentrated industries or industries with strong trade associations or unions may have secured during the NIRA period. Section VIII reviews qualitative evidence that the large and well-organized corporations within particular industries may have controlled the code structure and administration at the economic expense of the small, unorganized firms. Section IX provides some concluding comments.

PREVIOUS EVALUATIONS OF THE NRA'S DISTRIBUTIONAL  
CONSEQUENCES AND A SUMMARY OF THIS STUDY'S  
CONCLUSIONS

The primary goal of the National Industrial Recovery Act was, undeniably, economic recovery. However, Congressional proponents and administrators of the NIRA, as well as economic advisors to the Roosevelt Administration, agreed that recovery--particularly if it were to be sustained--could only be achieved by a significant redistribution of income from the relatively rich to the relatively poor. Only redistribution, it was argued, could generate an increase in purchasing power that would be sufficient to alleviate the economic depression. Hence, redistribution became an essential--even if secondary--objective of the National Recovery Administration.<sup>1</sup>

Both the language of the enabling legislation itself and the subsequent industrial codes reflect the intention of the NIRA architects and administrators to provide for redistribution. Most codes mandated that wage rates be increased, particularly for those employees earning at or near the minimum rate. In addition, many codes required the diminution, if not elimination, of

racial, sexual, and regional differentials in wages. Of special significance were the provisions that guaranteed labor's right to organize free from retaliation or harassment by employers or legal authorities.<sup>2</sup>

A study completed by members of the Brookings Institution in the aftermath of the NIRA experiment concluded that:

. . . there seems to have been a more or less official recovery theory based upon three hypotheses: (1) that an increase in total payrolls would add to net current spending; (2) that raising the lowest wages would both promote spending as just stated and in addition restore a proper balance between occupation which the depression had broken down; and (3) that measures which prevented further price declines, or in some cases raised prices would create a state of business confidence favorable to forward commitment . . . that instability would be mitigated by measures directed to producing less inequality in the distribution of income.<sup>3</sup>

Previous studies have generally concluded that the NIRA did not succeed--and may not have truly attempted--to generate more equality in the distribution of income (primarily by increasing the purchasing power of labor). Two types of arguments have been advanced to support this finding. First, many studies of the NIRA have documented the control of the National Recovery Administration apparatus wielded by industry representatives. Such political control of the NRA was then assumed to confer



significant economic benefits to industry at the expense of labor and consumers. Second, average hourly wages and retail prices were observed to be increasing at similar rates.

Few students of the NIRA would deny the dominance in the design and administration of the industrial codes. As Lyon, et al. conclude:

By reasons of circumstances, their [the Industrial Advisory Board, the Labor Advisory Board, The Consumers' Advisory Board] were forced into bargaining patterns. As a result, the theoretical parity of their advisors opinion was destroyed, for one of the groups [industry] was strongly organized to operate as a pressure group, the second [labor] mildly so, and the third [consumers] not at all.<sup>4</sup>

Or as Bernard Bellush has recently observed:

When the Administration selected the self-government pattern of regulation, a dominant place was automatically assured trade associations, for they were the best-organized forces available. As a result, not only did officials of existing associations actively initiate codes, but the code system became largely a direct offshoot of the trade association system.<sup>5</sup>

Specifically, the code authorities--the agencies responsible for the administering the individual industry codes--were dominated by trade association representatives. Less than ten percent of the code authorities included labor representatives and fewer than one percent had consumer representatives. For many students of the NIRA,

such political domination was assumed sufficient to preclude any significant equalizing redistribution of income.<sup>6</sup>

Other studies of the NIRA cite actual trends in wages and prices, rather than code structure and control, in order to argue that the NIRA did not successfully redistribute income to labor. The contemporaneous study by researchers from the Brookings Institution concluded that:

. . . it appears also that the relative advance of the two indexes [average hourly earnings and cost of living] was roughly the same . . . if on the average wage rates per hour were raised more than living costs, the difference was small. For the most part gains in noney earnings from this cause were offset by the effect of the NRA on the prices of the goods and services bought with these earnings.<sup>7</sup>

And from the same study:

If the NRA had as one of its objectives a basic redistribution of the income of the nation to the advantage of labor . . . its efforts along this line have had comparatively little success. If the objective be more narrowly defined as increasing the income of employees at the expense of the income of employers the same verdict must be pronounced.<sup>8</sup>

In a more recent study, Bernard Bellush argues similarly:

In the meantime, the real gain in purchasing power which farmers and employed workers enjoyed between February and June, 1933 was significantly reduced in July and August by a rapid rise in retail prices. . . . Although Wage rates tended to rise

as work hours fell, the average weekly pay increased minutely in one of these industries, dropped in three others, and rose significantly only in cotton goods. . . .<sup>9</sup>

Again, George Terborgh of the Brookings Institution, found that the:

. . . original delay in development of codes and speculative anticipation of their effects, prices generally rose before wage rates and when wages were raised by the codes, the gain proved to be only about equivalent to the increase in the cost of living. The codes, therefore, did little to change the distribution of the nation's aggregate income.<sup>10</sup>

Even Donald Richberg, general counsel of the NRA, admitted:

. . . that the rise in per capita earnings . . . had just about equalled the rise in the cost of living . . . [and therefore the average worker] is not better off in his individual standing, but there are more people employed.<sup>11</sup>

And Charles Roos found (in 1937) that ". . . real wages improved the insignificant amount represented by the difference between [an index of] 72.9 and 74.3 . . . we must conclude that these [employed workmen] failed to hold their own under the NRA plan for redistributing income."<sup>12</sup>

Finally, in 1935, the NRA's Research and Planning Division concluded that real wages had not increased significantly under the codes, citing the faster rise in retail prices than the six percent rise in wages between June of 1933 and November of 1934.<sup>13</sup>

It is the contention of this study that the historical evidence based on the actual movement of wages and prices provides a biased and distorted estimate of the impact of the codes. What is required is an estimate of what wages and prices would have been in the absence of the codes--the analysis in Chapter II providing just such an estimate. Based on the findings in Chapter II, and more evidence to be presented below, this study will contradict the findings of studies such as those by the NRA research staff.

Contrary to the findings of studies such as those by Lyons, et al. and Bellush (despite the assumed need for income redistribution by the NIRA advocates and administrators), this study finds that the NIRA codes did have significant distributional consequences. The evidence to be presented in this chapter supports--with qualifications--the following conclusions:

- 1) real average hourly earnings, for wage-earners in general, were dramatically increased during the NIRA period (by more than ten percent per year for the two-year period). As demonstrated in Chapter II, the NRA raised wage rates more than prices and thereby initiated a redistribution of purchasing power toward labor.

- 2) the hours restrictions of the industrial codes did effectively spread a given number of manhours of

employment over a larger number of employees. To the extent that the previously unemployed were then able to secure at least part-time employment, the distribution of income amongst persons in the labor force became more equal.

3) the codes did significantly reduce the differential in average hourly earnings between:

- a) the relatively skilled and the relatively unskilled workers;
- b) workers in low-pay and high-pay industries;
- c) male and female workers.

However, the diminution of the differential in average weekly earnings between these very same groups was much smaller. The imposition of minimum wages induced employers to substitute higher-paid workers; the average hours worked per week for the low-paid employees fell and their weekly income suffered. Nevertheless, the weekly income of the low-paid groups rose more than the weekly income of the more highly-paid workers (though females gained only moderately relative to males), but the differences were not nearly as dramatic as they were for hourly earnings. The codes did, therefore, insure a successful redistribution of income toward the disadvantaged workers.

The analysis in this chapter argues that the codes were successful in redistributing income to unskilled

workers despite the fact that the actual income of these individuals did not rise as quickly (during the NIRA period) as the incomes of the relatively skilled workers. However, the differential in weekly earnings would have risen even more in the absence of the code provisions. Though observation of actual weekly earnings suggests that income was becoming less equally distributed under the NIRA codes, the NIRA's contribution was, nonetheless, to promote more equality amongst workers of different skills.

4) there is qualitative evidence to suggest that the NIRA codes provided economic advantages to the larger and more politically powerful firms within various industries at the expense of the smaller, unorganized firms--an indication that not all the effects of the codes promoted equality.

This study will argue that the NIRA did redistribute income toward labor, in the two years following its passage by Congress, but that the codes also contributed to increased cartelization and monopolization of several industries (the major effects of which would have been realized only after the NIRA was declared unconstitutional). One implication is that the owners of small, unorganized firms were penalized not only by the precipitous rise in real wages but also by the loss of competitive position within their industries in comparison to

the larger, well-organized members.

The subsequent sections of this chapter will document these findings by examining, in order, the effect of the codes on: 1) the average real hourly wage rate; 2) the employment of more individuals through work-spreading; 3) earnings differentials between workers in low-pay and high-pay industries, earnings differentials between unskilled and relatively skilled workers, and earnings differentials between male and female workers; 4) the economic position of concentrated, unionized or otherwise well-organized industries relative to unconcentrated, unorganized industries; 5) the economic position of large or politically powerful firms relative to small competitors within a particular industry.

Data in the remainder of this chapter will frequently be presented for three separate periods of economic recovery in the United States (all prior to World War II):

1) the 1933-1935 aftermath of the Great Depression;

2) the 1921-1923 recovery previously discussed in Chapter II; and

3) the 1938-1939 recovery from the "Roosevelt Recession" that began in the Summer of 1937 and continued into the Spring of 1938. Industrial production fell rapidly--by almost thirty-two percent--between July of

1937 and May of 1938 and recovered almost as quickly in the ensuing year (the Federal Reserve Board index of industrial production rose by approximately 22 percent. See Table II-1).

The economic recoveries of the early 1920's and the late 1930's will be used for comparison with the NIRA period.



TABLE III-1

TOTAL INDUSTRIAL PRODUCTION, INCLUDING  
UTILITIES, 1936-1940

(1947-1949 = 100, Seasonally adjusted)

	1936	1937	1938	1939	1940
January	50.2	61.4	45.5	54.1	65.1
February	49.0	62.3	45.0	54.0	62.1
March	49.3	63.6	44.9	54.0	60.6
April	52.3	63.6	43.8	52.2	60.7
May	53.4	63.9	43.3	52.9	62.7
June	54.5	63.2	43.5	55.0	65.3
July	55.5	63.5	46.0	56.3	65.5
August	56.3	63.1	48.5	56.6	66.7
September	57.1	61.1	49.9	61.3	68.7
October	58.3	56.7	51.1	64.8	70.1
November	59.9	50.9	53.4	66.2	72.1
December	61.6	46.6	53.8	66.2	74.4
Yearly Average:	54.8	60.0	47.4	57.8	66.2

Source: U.S. Board of Governors of the Federal Reserve System, Industrial Production 1959 Revision. Washington: U.S. Government Printing Office, 1960.

## EFFECT OF THE NRA CODES ON THE REAL WAGE RATE

The effect of the codes in increasing the average hourly earnings of labor was analyzed in Chapter II. Table III-2 and Table III-3 provide data on the trends in total labor income for both those industries covered by NIRA codes and those industries not covered by NIRA codes. The annual total of nominal labor income increased slightly (approximately one-half of one percent) between 1932 and 1934 in the industries covered by the NIRA). In contrast, nominal total labor income actually fell by over four percent in the industries not covered by code provisions (such as the minimum wage regulations). The disparity of trends in labor income between the NRA and non-NRA industries is even more dramatic in real terms: the increase in the NRA industries exceeds four percent but falls by almost seven percent in the non-NRA industries.

The net impact of the codes on the purchasing power of labor cannot, unfortunately, easily be inferred from the data in Tables III-2 and III-3. First, the analysis presented in Chapter II suggests that labor markets

TABLE III-2

ACTUAL AND REAL TOTAL NRA AND NON-NRA  
LABOR INCOME PAID OUT

(Millions of dollars)

YEAR	Total Labor Income		NRA Labor Income		Non-NRA Labor Income	
	Actual	Real*	Actual	Real*	Actual	Real*
1929	51,875	51,875	38,595	38,595	13,280	13,280
1930	47,558	49,609	34,936	36,510	12,622	13,199
1931	40,083	47,137	28,596	33,621	11,487	13,516
1932	31,169	41,569	21,243	28,324	9,926	13,245
1933	28,965	40,149	19,898	27,552	9,067	12,597
1934	32,319	41,801	22,791	29,477	9,528	12,324

\*Computed from the NRA cost-of-living index (for which 1929 = 100).

Source: National Recovery Administration, Work Materials, No.8.

TABLE III-3

RATES OF CHANGE FOR ACTUAL AND REAL TOTAL NRA  
AND NON-NRA LABOR INCOME PAID OUT  
(%)

PERIOD	TOTAL LABOR INCOME		NRA LABOR INCOME		NON-NRA LABOR INCOME	
	Actual	Real	Actual	Real	Actual	Real
1930- 1932	-34.5	-16.2	-39.2	-22.4	-21.4	0.349
1932- 1934	3.69	0.558	7.29	4.07	- 4.01	-6.95
1933- 1934	11.6	4.11	14.5	6.99	5.08	-2.17

Source: Calculated from Table III-2.

were not segregated nor dysfunctional. The wages of the relatively few employees in the non-NRA industries were not immune to the codes; thus, the non-NRA industries do not provide a reliable guide to the behavior of labor income in the absence of legislation. Second, the non-NRA industries were not a random selection of industries. Each exempted industry was most uncharacteristic of United States industry in general and, for this reason alone, provides a most suspicious standard by which to compare the trend in labor income in the industries covered by the industrial codes. The group of non-NRA industries in Table III-2 and Table III-3 include government, professional and domestic services, railroads and agriculture (which was covered by other New Deal legislation, such as the Agriculture Adjustment Act, which, in a few respects, resembled the NIRA). Third, labor income depends not only on average earnings per unit of time, but also on the total number of employed man-hours. Thus, labor income for NRA and non-NRA industries could have behaved differently due to differential rates of economic recovery for the two separate groups of industries. These two groups of industries might well have had different records of economic recovery due to the NIRA since the non-NRA industries were not representative of the general economy.

Previous studies of the NIRA (including Lyon, et al., Bellush, the National Recovery Administration itself, Himmelberg) generally relied on trends in actual wage and prices to estimate the redistributive impact of the legislation. Unfortunately, such methods do not carefully consider what the course of earnings and prices would have been in the absence of the legislation--and, therefore, cannot reliably determine the net effect of the codes.

Tables III-4, III-5, and III-6 provide data on the actual trend of industrial production, average hourly earnings, and average weekly earnings for the three separate economic recoveries previously discussed. From Table III-4, note that average hourly earnings rose by slightly more than one percent between 1921 and 1923, less than one percent between 1938 and 1939, but by more than twenty-four percent during the (two-year) NIRA period. Similarly, average weekly earnings rose by approximately seven percent in the recoveries of the early nineteen-twenties and late nineteen-thirties, but by more than twenty percent in the NIRA period, despite an almost four percent decline in average weekly hours per employee. The data in Table III-4 documents, therefore, a significant disparity in the extent to which average earnings rose during the three economic

TABLE III-4

## HOURS AND EARNINGS FOR PRODUCTION WORKERS IN MANUFACTURING

YEAR	AVERAGE HOURLY EARNINGS	AVERAGE WEEKLY HOURS	AVERAGE WEEKLY EARNINGS
1919	\$0.477	46.3	\$22.08
1920	0.555	47.4	26.30
1921	0.515	43.1	22.18
1922	0.487	44.2	21.51
1923	0.522	45.6	23.82
1929	0.566	44.2	25.03
1930	0.552	42.1	23.25
1931	0.515	40.5	20.87
1932	0.446	38.3	17.05
1933	0.442	38.1	16.73
1934	0.532	34.6	18.40
1935	0.550	36.6	20.13
1936	0.556	39.2	21.78
1937	0.624	38.6	24.05
1938	0.627	35.6	22.30
1939	0.633	37.7	23.86

Source: U.S. Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1957, p. 92.

TABLE III-5

## REAL HOURLY AND REAL WEEKLY EARNINGS

YEAR	REAL HOURLY EARNINGS*	REAL WEEKLY EARNINGS*
1919	\$0.487	\$22.55
1920	0.491	23.27
1921	.510	21.96
1922	.514	22.71
1923	.541	24.71
1929	.584	25.80
1930	.585	24.63
1931	.599	24.27
1932	.578	22.09
1933	.605	22.89
1934	.703	24.31
1935	.709	25.94
1936	.709	27.78
1937	.768	29.62
1938	.786	27.94
1939	.805	30.36

\*Nominal earnings deflated by the Bureau of Labor Statistics' Consumer Price Index (for all commodities; 1926 = 100).

Source: Earnings date is from Table III-4.

Consumer Price Index is from the U.S. Bureau of Census, Historical Statistics of the United States, Colonial Times to 1957, (converted to 1926 = 100).



TABLE III-6

## WHOLESALE AND CONSUMER PRICE INDICIES, 1919-1939

YEAR	(1)	(2)	(3)
	Wholesale Price Index (all commodities)	Wholesale Price Index (all commodities other than farm products and foods)	Consumer Price Index (all items)
	1926 = 100	1926 = 100	1947-1949 = 100
1919	138.6	128.8	74.0
1920	154.4	161.3	85.7
1921	97.6	104.9	76.4
1922	96.7	102.4	71.6
1923	100.6	104.3	72.9
1929	95.3	91.6	73.3
1930	86.4	85.2	71.4
1931	73.0	75.0	65.0
1932	64.8	70.2	58.4
1933	65.9	71.2	55.3
1934	74.9	78.4	57.2
1935	80.0	77.9	58.7
1936	80.8	77.9	58.7
1937	86.3	85.3	61.4
1938	78.6	81.7	60.3
1939	77.1	81.3	59.4

Source: U.S. Bureau of the Census, Historical Statistics of United States, Colonial Times to 1957. Column (1): E-13; column (2): E-14; column (3): E-113.

recoveries. Table III-5 suggests that the disparity is not as large for real earnings. Nominal hourly earnings deflated by consumer prices (for all commodities) rose by more than three percent per year during the recovery of the early nineteen-twenties, by less than three percent annually in the recovery of the late nineteen-thirties, but by approximately 8.5 percent per year during the NIRA period. Nominal weekly earnings deflated by consumer prices rose by more than 12.5 percent between 1921 and 1923, by approximately thirteen percent between 1933 and 1935, and by more than eight percent between 1938 and 1939. The price trends presented in Table III-6 indicate that some of the previously cited large increases in nominal earnings during the NIRA period were vitiated, in part, by the more than six percent increase in consumer prices. In contrast, the (Bureau of Labor Statistics) Consumer Price Index actually decreased during the years between 1921 and 1923 and between 1938 and 1939--and thereby accentuated the real impact of the increases in nominal earnings (both hourly and weekly) during those recovery periods.

Table III-7 provides data for nominal earnings deflated by the (Bureau of Labor Statistics) Wholesale Price Index. For deflation by this price index (including all commodities), real hourly earnings fell by 1.7 percent in the early nineteen-twenties, rose by almost three percent

TABLE III-7

## REAL HOURLY AND WEEKLY EARNINGS

YEAR	REAL HOURLY* EARNINGS	REAL WEEKLY* EARNINGS	ADJUSTED** REAL HOURLY EARNINGS	ADJUSTED** REAL WEEKLY EARNINGS
	(1)	(2)	(3)	(4)
1919	\$0.344	\$15.93	\$0.370	\$17.14
1920	0.359	17.03	0.344	16.31
1921	0.528	22.73	0.491	21.14
1922	0.504	22.24	0.476	21.01
1923	0.519	23.68	0.500	22.84
1929	0.594	26.26	0.618	27.33
1930	0.639	26.91	0.648	27.29
1931	0.705	28.59	0.687	27.83
1932	0.688	26.31	0.635	24.29
1933	0.671	25.39	0.621	23.50
1934	0.710	24.57	0.679	23.47
1935	0.688	25.16	0.706	25.84
1936	0.688	26.96	0.698	27.36
1937	0.723	27.87	0.732	28.19
1938	0.798	28.37	0.767	27.29
1939	0.821	30.95	0.779	29.35

\*Earnings deflated by Wholesale Price Index for all commodities; 1926 = 100.

\*\*Earnings deflated by Wholesale Price Index for all commodities other than farm products and foods; 1926 = 100.

Source: Table III-4, Table III-6.

in the late nineteen-thirties, and rose by only 2.5 percent in the NIRA period. More surprisingly, real weekly earnings (for deflation by wholesale prices) actually declined by almost one percent in 1933 thru 1935, though rising in both the early nineteen-twenties and late nineteen-thirties (by approximately four and nine percent respectively). It is these trends in the rate of increase of earnings relative to wholesale prices that are most often cited as evidence that the NIRA did not successfully redistribute income (the Brookings Institution study) or redistributed income "perversely," i.e., against labor (Bellush). However, even if such data as in Table III-5 is to be used for such conjectures, at least one correction should be made. Agricultural prices were driven up not by NIRA code regulations but, at least in part, by the Agricultural Adjustment Act. When nominal earnings are deflated by a wholesale price index which excludes farm products and foods, then (from Table III-7) real hourly earnings rose by more than thirteen percent between 1933 and 1935, and by less than two percent during the other two recoveries. The NIRA thereby appears to have had a larger impact on real earnings than previously revealed by examining actual wage and price movements. Nominal weekly earnings deflated by a wholesale price index which excludes agricultural products rose by almost ten percent during the NIRA, and by almost

one and more than seven percent in the nineteen-twenties and late nineteen-thirties respectively. Again, deflation by a wholesale price index which excludes the direct impact of the Agricultural Adjustment Act suggests that the NIRA imparted a larger boost to real earnings--and thereby to labor's purchasing power--than those estimates based on a wholesale price index which includes agricultural products.

Note that to determine the effect of the industrial codes on average earnings per unit of time is not to determine the effect of the codes on labor's purchasing power; the total number of man-hours per unit of time might also have been affected. As in Chapter II, this chapter's analysis provisionally assumes that the NIRA did not significantly alter the aggregate level of employed man-hours. Thus, changes in purchasing power of labor per unit of time will be assumed (until Chapter IV) to reflect changes in average earnings per unit of time.

Accounting for the trends in actual wages and prices, as presented above, cannot account for what the trends in labor earnings would have been in the absence of NIRA regulations. However, the analysis already presented in Chapter II explicitly estimated the amount by which average hourly earnings and prices would have changed relative to what would have occurred if no

structural changes in the wage and price mechanism had been imposed by Congressional legislation. The conclusion from Chapter II was that the NIRA contributed twenty-six percent annually to wages and fourteen percent annually to wholesale prices. Contrary to the naive estimates based on actual wages and prices, the redistribution of income toward labor due to the NIRA was extensive. The codes were responsible for increases in real average hourly earnings by more than ten percent per year--or more than twenty percent during the two-year period of the NIRA.

It should be remembered that the finding of a more than twenty percent increase in real average hourly earnings applies only for the 1933-1935 NIRA period. If one were to determine the longer-run affects, explicit consideration would have to be devoted to the continuing influence--after May, 1935--of the impetus to collective bargaining and cartelization (price-fixing, for example) that was initiated by the NRA. As one example, the burst in the growth of industrial unions did not occur until 1936. Also, legal sanction for open collusion by industrial members undoubtedly rendered it easier to collude--though illegally--after the Schechter decision. Furthermore, many sections of the NIRA were reinstated in later Congressional legislation. For example, collective bargaining sections quite similar to those initiated under

the NIRA were included in the National Labor Relations Act of 1935. Only future examination will be able to distinguish affects of the NIRA beyond the two-year horizon of this study.

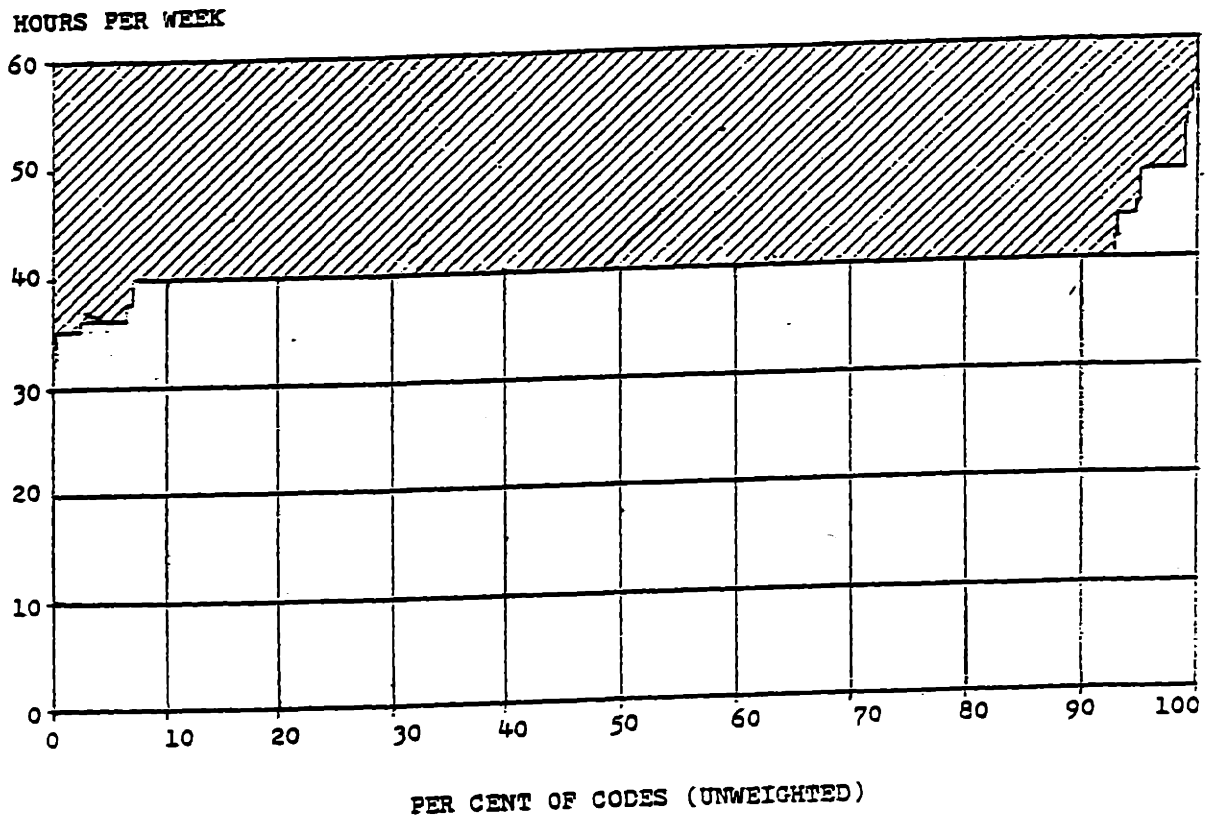
## MAXIMUM HOURS REGULATION AND EMPLOYMENT

The attempt to spread employment to more individuals, by restricting the maximum number of hours per week any individual (with some exceptions) could work, was the most unqualified success of the NIRA Program. Chart III-1 indicates that most codes imposed a thirty-five to forty hours per week maximum for workers, though exceptions were granted for special circumstances. Chart III-2 indicates, for one typical industry, the dramatic reduction in the number of employees working more than forty hours per week after code adoption.

To determine the quantitative effect of the codes on average hours worked per employee and on total employment requires examination of the incidence of the specific hours provisions of codes in individual industries. Unlike the effect of wage provisions, the variations in average hours per employee in individual industries are not necessarily dependent. Moreover, the actual changes in average hours per employee are not reliable guides to the effect of code provisions, because such changes are also related to the business cycle. Both the recoveries



CHART III-1  
MAXIMUM WEEKLY HOURS BY CODES  
(BASED ON 516 CODES)

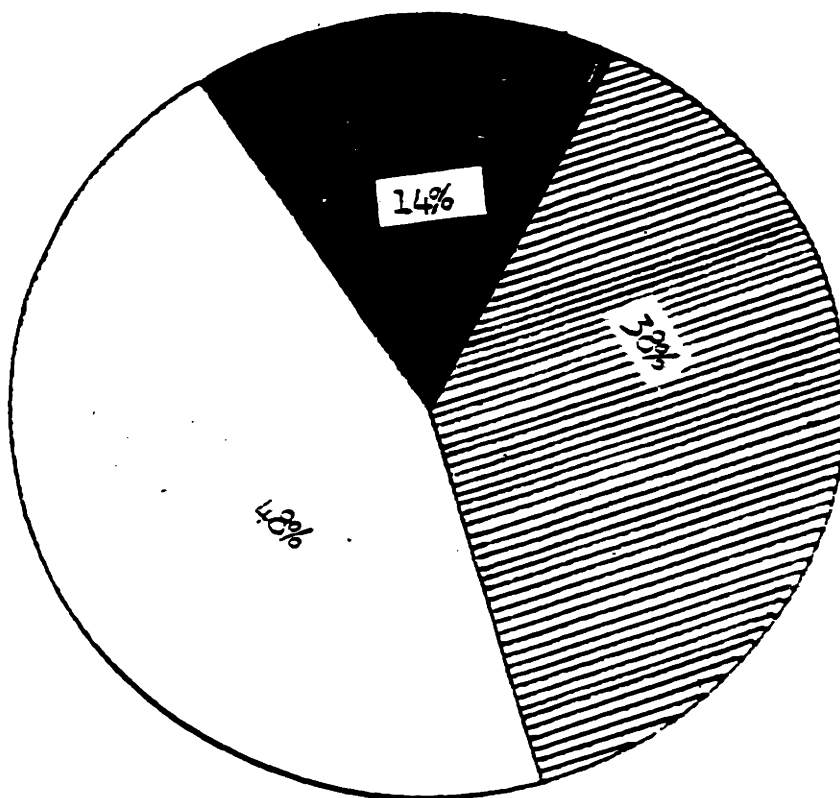


Source: National Recovery Administration, Charts on the Operation of the National Industrial Recovery Act, Chart 57.

CHART III-2

DISTRIBUTION OF WEEKLY HOURS IN 672 COTTON GARMENT PLANTS  
FEBRUARY 1933 AND FEBRUARY 1934

1933



Over 50 hours



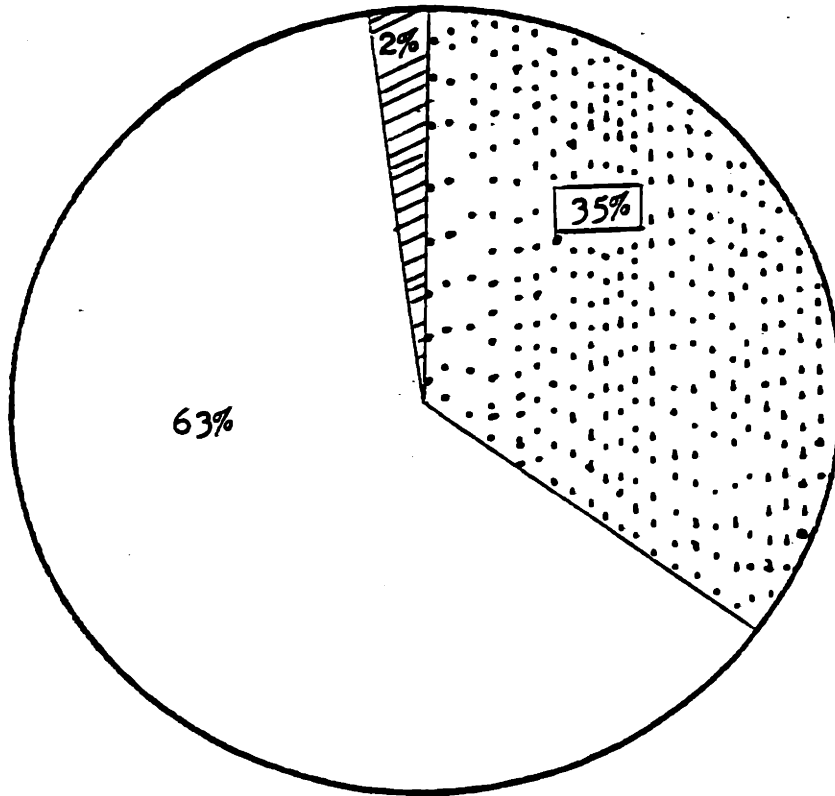
40 to 50 hours




Under 40 hours

CHART III-2  
(continued)

1934



 Over 40 hours

 40 hours

 Under 40 hours

Source: National Recovery Administration, Charts on the Operation of the National Industrial Recovery Act. Chart 40.

of 1921-1923 and 1938-1939 indicate that a positive association exists between average hours worked per week by employees and economic expansion. Hours worked per employee in manufacturing industries rose by 2.5 percent between the period from June, 1920 to April, 1921 (prior to the business trough) and the period from May, 1921 to May, 1923 (the period after the business trough).<sup>14</sup> Similarly, hours worked per employee in manufacturing rose by almost six percent between 1938 and 1939. Thus the movement in average hours per week per employee during the NIRA period confounds two influences: 1) the hours provisions of the codes; and 2) the economic recovery. To abstract from the influence of general economic expansion, the Brookings Institution estimated the effect of the hours provisions assuming the same general level of employment as that which prevailed during the months just preceding the passage of the NIRA. Lyons, et al. conclude:

The best estimates we are able to make indicate that the total gain in employment attributable to the shortening of hours by the codes was about 1,750,000 or roughly 6-7 percent of the average number of employees in the pre-code period of April-July 1933. . . . This gain is computed at a level of general activity comparable with the average in April-July 1933. . . .<sup>15</sup>

A spreading of employment to more individuals--even if total employed man-hours were unchanged--would have

promoted more equality in the distribution of income during the NIRA period. The Brookings Institution estimates indicate that the redistribution was not trivial.<sup>16</sup>

Two other studies confirm the Brookings Institution estimate. As discussed in Section IV of Chapter I, both the estimates of the National Recovery Administration and Charles Roos agree that the maximum hour provisions added approximately two million to the payrolls (without increasing total production).

## PAY DIFFERENTIALS AMONG INDUSTRIES

Not only were the NIRA codes designed to redistribute purchasing power toward labor--successfully this study claims--but also to redistribute labor income toward the relatively lower income groups. The extent to which the Roosevelt Administration or Congressional architects of the NIRA intended to reduce differentials in earnings between males and females and among employees in different regions, occupations, and industries is difficult to determine. No redistributive goals were made explicit except in so far as redistribution was thought necessary to generate the increases in labor's purchasing power required for economic recovery. What is certain is that disputes continued for the duration of hearings before code authorities among the representatives of labor, industry, consumers, and NRA administrators over the extent to which earnings differentials were to be narrowed.

Industry representatives advocated that differentials for various classifications of employees be provided in the minimum wage provisions of the codes.

Industry wanted lower minimum wages for southern black males, females, and firms in certain geographic regions, occupations, and city size. Industry spokespersons claimed that differentials in pay were required to preserve the competitive position of disadvantaged industry (due, for example, to location), to compensate for differences in cost of living, or to mute severe unemployment effects for the relatively low-paid employees. Labor representatives, particularly powerful unions, opposed such differentials as an unveiled attempt to restrict the purchasing power of labor and a perpetuation of unfair, and economically unjustified, discrimination. For example, representatives of southern industry defended lower minimum wages for their employees because of supposed competitive disadvantages of southern industry as well as a lower cost of living; labor representatives opposed geographic differentials as a device which would contribute to economic stagnation of the South and to unnecessarily protect industry's exploitation of unorganized southern labor. Even a 1933 report of the Department of Labor concluded that:

. . . there were no economic reasons for wage differences between regions and that these should be eliminated as soon as feasible.<sup>17</sup>

The result of these many disputes was the institution of several types of differentials not only in the

minimum wage specified by the codes for different categories of employees, but also in regulations for wages for those employees earning more than the minimum rates. Many codes included some provision for a lower southern weekly minimum wage; most frequently a twelve dollar minimum weekly wage was specified for the South and a thirteen dollar weekly minimum for the North.

No matter how ambiguous and varied the intentions may have been, many of the code provisions had the effect of promoting more equality among wage-earners. The minimum rates for most industry codes approximated the minimum rates paid by those firms with the higher pay scales--with the expected effect of narrowing the differentials in pay among employees within individual industries.<sup>18</sup> Additionally, most codes shared a common minimum rate (thirteen dollars weekly; forty cents per hour) so that differentials in weekly earnings of employees among the many industries would also be diminished. Not all industries shared the most common minimum wage provisions--lower rates (frequently thirty-five cents per hour) were provided for some lower-wage industries to preserve their competitive position. As the Report of the President's Committee of Industrial Analysis concludes:

. . . the minimum wages established in most codes represented no excessive



dislocation of established practices, but rather a comparatively large increase of rates in industries with low wage levels, and a moderate increase in those with higher wage levels, and a general effort to attain a degree of competitive equality within each industry.<sup>19</sup>

Table III-8 provides data on average hourly and weekly earnings for two groups of industries. Group A includes fifteen industries, among all of those industries covered by NIRA codes, with the lowest average hourly earnings. Group B includes fifteen industries with the highest average hourly earnings of all those industries covered by the codes. Table III-9 gives the rate of change in average hourly earnings and average weekly earnings during the NIRA period (from May, 1933 thru May, 1935) for each of the industries and the average rate of change for each group of industries. Similar rates of change are provided for employment, payrolls, hours worked per week per employee, and man-hours. Note that the rate of increase in hourly earnings per employee for the fifteen low-wage industries averaged 42.5 percent, but only 19.8 percent for the fifteen high-wage industries. The difference in the two rates of change--over twenty percent--is significant (at the five percent level). Thus, there is evidence to suggest that the codes did preferentially benefit the employees in lower-wage industries.

TABLE III-8

AVERAGE HOURLY EARNINGS FOR HIGH-WAGE AND LOW-WAGE INDUSTRIES  
May, 1933 and May, 1935

	Average Hourly Earnings May, 1933	Average Hourly Earnings May, 1935
<b>Group A</b>		
<b>FIFTEEN LOW-WAGE INDUSTRIES</b>		
1. Hotel	\$0.230	\$0.280
2. Throwing	0.240	0.391
3. Fertilizer	0.251	0.364
4. Cotton Textile	0.323	0.496
5. Cotton Garment	0.248	0.423
6. Underwear and Allied Products Manufacturing	0.238	0.392
7. Structural Clay Products	0.275	0.420
8. Lumber and Timber Products	0.279	0.431
9. Canning	0.326	0.406
10. Furniture Manufacturing	0.291	0.423
11. Laundry Trade	0.333	0.367
12. Knitted Outerwear	0.298	0.458
13. Candy Manufacturing	0.337	0.447
14. Silk Textile	0.321	0.459
15. Vitrified Clay Sewer Pipe Manufacturing	0.347	0.404
<b>Group B</b>		
<b>FIFTEEN HIGH-WAGE INDUSTRIES</b>		
1. Shipbuilding and Shiprepairing	0.556	0.750
2. Railway Safety Appliance	0.594	0.665
3. Automobile Manufacturing	0.578	0.727
4. Scientific Apparatus	0.596	0.652
5. Rubber Tire Manufacturing	0.584	0.837
6. Aircraft Manufacturing	0.613	0.639
7. Petroleum (Crude Petroleum Producing	0.636	0.780
8. Special Tool Die and Machine Shop	0.575	0.673
9. Petroleum (Petroleum Refining)	0.620	0.789
10. Printing Equipment Industry and Trade	0.654	0.688
11. Graphic Arts	0.659	0.739
12. Brewing	0.467	0.531
13. Daily Newspaper Publishing	0.759	0.931
14. Anthracite Coal Mining	0.814	0.822
15. Coat and Suit	0.834	1.081

Calculated from data collected by Division of Review, National Recovery Administration.

TABLE III-9

AVERAGE RATE OF CHANGE FOR LOW-WAGE AND HIGH-WAGE  
INDUSTRIES OF EARNINGS, EMPLOYMENT, AND  
HOURS WORKED

(%)	Average Hourly Earnings	Average Weekly Earnings		
Low-Wage Industries: Percentage Change Between May, 1933 and May, 1935	42.5	25.0		
High-Wage Industries: Percentage Change Between May, 1933 and May, 1935	19.8	19.7		
	Employ- ment	Pay- rolls	Man- hours	Average Hours Worked per Week
Low Wage Industries: Percentage Change Between May, 1933 and May, 1935	11.1	41.5	6.04	-12.1
High-Wage Industries: Percentage Change Between May, 1933 and May, 1935	33.6	65.1	41.2	3.55

Source: Percentage changes calculated from Table III-8  
and from data collected by Division of Review,  
National Recovery Administration.

Furthermore, the average rate of increase during the NIRA period in weekly earnings per employee was almost twenty-five percent for the low-wage industries and less than twenty percent for the high-wage industries. Though the low-wage employees still gained relatively to employees in high-wage industries, on average, the difference is not nearly as large (nor statistically significant). The relative gains in hourly earnings per employee for the low-pay industries was offset, though only in part, by a large reduction in hours worked per week per employee. In fact, hours worked per week per employee actually decreased for the fifteen low-wage industries but increased for the high-wage industries.

Note that, in addition to the particularly large decline in average hours worked per employee, the low-pay industries also suffered a significantly slower economic recovery (as reflected by the changes in employment and man-hours) during the NIRA period. The relatively high wage hikes would seem to have discouraged employment. This impact is not surprising. Subsequent sections of this chapter will show that other low-paid workers (for example, females and the unskilled) who received the largest hourly pay increases also experienced the largest declines in average hours worked per week. Consequently, the gains in weekly earnings for these low-paid

workers were modest in comparison to the original increases in hourly wages. Nonetheless, to whatever extent the codes did raise the weekly wages of the low-paid employees more than for the high-paid employees, the NIRA did succeed in narrowing the distribution of earned income.

PAY DIFFERENTIALS BETWEEN EMPLOYEES OF  
DIFFERENT SKILLS

The NIRA codes were not designed solely to increase the wages of those employees earning the least. Consideration was also directed to wages of those employees who earned more than the (newly-mandated) minimum rates.

The President's Re-employment Agreement (PRA) included a provision that the employer would not "reduce the compensation for employment now in excess of the minimum wages hereby agreed to . . . and to increase the pay for such employment by an equitable adjustment of all pay schedules." Characteristically, "equitable" was never specifically defined. Most frequently, codes advocated that weekly wages were to be maintained. Of course, if wages at the minimum were increased and wages above the minimum not reduced, the differential between wages at the minimum and above the minimum would be reduced. Several codes called for "equitable" readjustment of wages above the minimum in relation to the changes in wages at the minimum, but rarely did codes actually mandate that previous differences be maintained. Less than seven percent of all employees in industries

covered by NIRA codes (represented by less than eleven percent of the codes) were covered by codes which explicitly required that previous differentials in (weekly) wages be maintained. Of the nearly six-hundred codes that were eventually adopted, almost one-third required an ambiguously specified "equitable" adjustment of wages; twenty-eight percent required maintenance (or specified percentage) of previous weekly earnings. Less than three percent of the codes ignored wages above the minimum and almost fourteen percent suggested policies for wages above the minimum but contained no mandatory provisions. More than nine percent contained a precisely delineated wage schedule or basing-point system for wages above the minimum--generally in those industries where strong unions were present. Labor generally desired detailed wage schedules; industry and NRA administrators generally opposed them in favor of more ambiguously worded formulations.<sup>20</sup>

To test the impact of the NIRA codes on the differential in wages between those earning at (or near) the minimum rates and those earning above the minimum, Table III-10 provides data for 1920-1923 on earnings differentials. The data was collected by the National Industrial Conference Board, from both employers and workers. Unskilled male labor was defined "as that for which no

TABLE III-10

## SKILL DIFFERENTIALS FOR EARNINGS AND HOURS: 1920's

Month	(%)		HRSWORK*	RELHRSWORK
	RELHREARN	RELWKEARN		
June, 1920	31.0	33.0	0.7	1.41
July	30.1	31.3	0.4	0.795
August	29.6	31.0	0.4	0.796
September	29.3	29.7	0.1	0.201
October	30.0	28.8	-0.6	-1.20
November	30.6	29.8	-0.6	-1.25
December	29.4	32.5	0.9	1.94
January, 1921	32.0	30.5	-0.7	1.54
February	32.8	31.5	-0.5	1.11
March	34.7	31.5	-1.2	-2.58
April	35.6	33.3	-1.0	-2.17
May, 1921	34.7	30.6	-1.6	-3.49
June	34.7	33.4	-0.4	-0.883
July	37.2	38.8	0.8	1.77
August	39.3	36.5	-0.8	-1.71
September	40.0	37.5	-0.8	-1.70
October	40.5	38.6	-0.5	-1.03
November	41.1	39.8	-0.1	0.209
December	43.3	39.7	0.0	0.0
July, 1922	40.0	37.2	-0.8	-1.62
August	41.1	39.1	-0.7	-1.39
September	42.0	38.7	-1.0	-0.198
October	40.8	38.7	-0.7	-1.37
November	40.8	39.4	-0.6	-1.18
December	39.7	37.6	-0.6	-1.17
January, 1923	40.0	39.5	0.0	0.0
February	40.8	40.6	0.1	0.198
March	41.0	39.6	-0.4	-0.781
April	39.3	39.6	0.2	0.393
May	38.3	37.2	-0.4	-0.786

\*Hours of work per week

Source: calculated from Beney, M. Ada. Wages, Hours and Employment in the United States 1914-1936.



previous training is required"; semi-skilled and skilled male labor "covers all other male labor."<sup>21</sup>

For 1920-1923, Table III-10 provides data on differentials in nominal earnings and in hours worked per week between male workers classified as unskilled and male workers classified as either semi-skilled or skilled. Table III-11 gives the same information for 1932-1936. The various skill differentials are defined as follows:

1) RELHREARN: the relative differential in nominal average hourly earnings:

$$\text{RELHREARN} = \frac{\text{SKHREARN} - \text{UNSKHREARN}}{\text{UNSKHREARN}}$$

where, SKHREARN = nominal average hourly earnings for semi-skilled and skilled male labor;  
UNSKHREARN = nominal average hourly earnings for unskilled male labor.

2) RELWKEARN: the relative differential in nominal average weekly earnings:

$$\text{RELWKEARN} = \frac{\text{SKWKEARN} - \text{UNSKWKEARN}}{\text{UNSKWKEARN}}$$

where, SKWKEARN = nominal average weekly earnings for semi-skilled and skilled male labor;  
UNSKWKEARN = nominal average weekly earnings for unskilled male labor.

3) HRSWORK: the absolute differential in hours worked per week per employee:

TABLE III-11

## SKILL DIFFERENTIALS FOR EARNINGS AND HOURS: 1930's

(%)

Month	RELHREARN	RELWKEARN	HRSWORK*	RELHRSWORK
June, 1932	39.9	32.8	-2.0	-5.75
July	40.5	33.0	-1.9	-5.62
August	39.3	33.4	-1.3	-3.85
September	40.1	34.1	-1.4	-3.84
October	40.9	33.1	-1.9	-4.96
November	40.7	36.7	-0.9	-2.39
December	39.2	36.1	-0.6	-1.67
January, 1933	37.1	34.2	-0.7	-1.93
February	38.2	34.8	-0.9	-2.45
March	39.0	35.4	-0.6	-1.82
April	39.7	33.0	-1.3	-3.65
May, 1933	39.7	31.3	-3.3	-5.56
June	38.8	34.7	-1.2	-2.78
July	37.7	35.1	-0.6	-1.35
August	37.4	37.9	0.1	2.54
September	35.1	37.6	0.8	2.19
October	34.7	36.8	0.6	1.63
November	35.7	41.6	1.5	4.49
December	35.1	38.2	0.8	2.36
January, 1934	33.2	35.2	0.6	1.78
February	33.9	34.8	0.2	0.567
March	33.1	35.3	0.7	1.96
April	32.8	34.7	0.5	1.40
May	33.2	37.7	1.2	0.344
June	35.2	36.0	0.3	0.843
July	34.3	36.0	0.4	1.18
August	35.1	36.4	0.5	1.51
September	36.0	35.3	0.0	0.0
October	34.7	38.0	0.8	2.38
November	34.3	39.2	1.4	0.423
December	34.7	38.8	1.1	0.323
January, 1935	33.9	37.0	0.9	2.53
February	34.5	36.2	0.6	1.63
March	33.5	35.8	0.7	1.93
April	33.9	38.0	1.1	0.303
May	33.9	39.1	1.5	0.421

\*Hours of work per week.

Source: same as for Table III-11.

$$\text{HRSWORK} = \text{SKHRWORK} - \text{UNSKWORK}$$

where, SKHRWORK = average hours worked per week for semi-skilled and skilled male labor;

UNSKHRWORK = average hours worked per week for unskilled male labor.

4) RELHRSWORK: the relative differential in hours worked per week per employee:

$$\text{RELHRSWORK} = \frac{\text{HRSWORK}}{\text{UNSKWORK}}$$

5) REALHREARN: the differential in real average hourly Data for the following two differentials in real earnings are given in Table III-12:

$$\text{REALHREARN} = \frac{\text{SKHREARN} - \text{UNSKHREARN}}{\text{WPI}}$$

where, WPI = wholesale price index.

6) REALWKEARN: differential in real average weekly earnings:

$$\text{REALWKEARN} = \frac{\text{SKWKEARN} - \text{UNSKWKEARN}}{\text{WPI}}$$

No qualitative results are altered if, for REALHREARN and REALWKEARN, nominal earnings are deflated, instead, by a consumer price index.

From the data in Tables III-10, III-11, and III-12 averages were determined for several alternative measures of the skill differential in earnings. The calculations are given in Table III-13 and Table II-14 for six

TABLE III-12

## SKILL DIFFERENTIALS: REAL EARNINGS FOR THE 1920's

MONTH	REALHREARN	REALWKEARN
June, 1920	\$0.105	\$5.57
July	0.102	5.37
August	0.102	5.36
September	0.102	5.13
October	0.104	4.97
November	0.105	4.90
December	0.100	5.13
January, 1921	0.144	6.24
February	0.151	6.55
March	0.160	6.74
April	0.169	7.25
May	0.165	6.64
June	0.165	7.18
July	0.170	7.99
August	0.172	7.42
September	0.170	7.50
October	0.170	7.82
November	0.173	8.06
December	0.180	8.06
July, 1922	0.160	7.33
August	0.165	7.87
September	0.175	8.14
October	0.172	8.28
November	0.170	8.33
December	0.167	8.12
January, 1923	0.167	8.41
February	0.172	8.60
March	0.172	8.44
April	0.172	8.77
May	0.176	8.72

\*1926 constant dollars.

Source: same as for Table III-10.

TABLE III-12a

## SKILL DIFFERENTIALS: REAL EARNINGS FOR THE 1930's\*

MONTH	REALHREARN	REALWKEARN
June, 1932	\$0.249	\$7.07
July	0.247	6.73
August	0.236	6.72
September	0.237	7.27
October	0.242	7.41
November	0.241	7.33
December	0.238	7.88
January, 1933	0.234	7.82
February	0.242	8.06
March	0.243	7.23
April	0.245	7.28
May	0.233	7.24
June	0.220	8.46
July	0.205	8.40
August	0.222	8.81
September	0.218	8.52
October	0.216	8.44
November	0.224	8.69
December	0.223	8.23
January, 1934	0.211	7.55
February	0.212	7.68
March	0.209	8.01
April	0.216	8.13
May	0.218	8.66
June	0.227	8.23
July	0.222	7.90
August	0.221	7.59
September	0.223	7.27
October	0.221	8.09
November	0.220	8.33
December	0.220	8.37
January	0.211	8.21
February	0.213	8.25
March	0.208	8.06
April	0.208	8.48
May	0.208	8.54

\*1926 constant dollars

Source: same as for Table III-12.

TABLE III-13

AVERAGE VALUES FOR SKILL DIFFERENTIALS DURING THE 1920'S AND 1930'S

PERIOD	RELHREARN (%)	RELWKEARN (%)	HRSWORK (hours)	REALHREARN (1926 dollars)	REALWKEARN (1926 dollars)	RELHRSWORK (%)
June, 1920- April, 1921	31.4	31.2	-0.191	0.122	5.75	-0.052
May, 1921- Dec., 1921	38.9	36.9	-0.425	0.171	7.58	-0.854
June, 1932- April, 1933	39.5	34.2	-1.23	0.241	7.35	-3.45
May, 1933 Dec., 1933	36.8	36.6	-0.025	0.220	8.35	0.440

Source; calculated from Tables III-10, III-11, and III-12.

TABLE III-14

AVERAGE VALUES FOR SKILL DIFFERENTIALS DURING THE 1920'S AND 1930'S

PERIOD	RELHREARN (%)	RELWKEARN (%)	HRSWORK (hours)	REALHREARN (1926 dollars)	REALWKEARN (1926 dollars)	RELHRSWORK (%)
June, 1920- April, 1921	31.4	31.2	-0.191	0.122	5.75	-0.052
May, 1921- May, 1923	39.7	38.0	-0.437	0.170	7.98	-0.776
June, 1932- April, 1933	39.5	34.2	-1.23	0.241	7.35	-3.45
May, 1933- May, 1935	35.0	36.7	0.492	0.217	8.17	0.922

Source: calculated from Tables III-10, III-11, and III-12.

subperiods--three during the early 1920's and three during the 1930's. The months between June, 1920 and April, 1921 represent the months prior to the trough of the 1920-1921 recession; May, 1921 thru December, 1921 represent the initial months of recovery (after the business trough). The months between May, 1921 and May, 1923 represent an extended recovery period. Similarly, the months between June, 1932 and April, 1933 represent the months prior to the initiation of the NIRA and, approximately, the months prior to the trough; the months between May, 1933 and December, 1933 represent the initial months of recovery--and code adoption; May, 1933 thru May, 1935 represents an extended recovery phase of the business cycle (and the entire NIRA period).

From Table III-13, one can observe that, for the 1920's business cycle, the relative differential in nominal hourly earnings (column 1) increased, if the average for the final eleven months of the recession phase (June, 1920 thru April, 1921) is compared to the average for the initial eight months of the recovery phase (May, 1921 thru December, 1921). Similarly, the differential in nominal weekly earnings increased,<sup>22</sup> implying that the distribution of earned income (among employed persons) became less equal as recovery proceeded. In comparison, for the 1930's, RELHREARN declined and RELWKEARN increased once



the trough of the Depression was passed (columns 1 and 2 of Table III-14). That the pattern for hourly earnings displayed in the 1920's was reversed in the 1930's can be attributed, at least in part, to the NIRA. The codes required that wages of the unskilled rise but only stabilized (or merely encouraged "equitable adjustment") wages of the more skilled, thereby successfully narrowing hourly wage differentials.

The disparity in the behavior of the differential in hourly earnings (which declined) and the differential in weekly earnings (which increased) for the early 1930's is also traceable to the NIRA codes and their affect of average hours worked per week per employee. In the 1920's recovery, the average hours worked per employee for the unskilled increased relative to the average hours worked per week for the relatively more skilled. Just the opposite occurred in the 1930's and would seem to be due to the relatively larger wage gains accruing to the unskilled workers. Employers thereby had more of an incentive to allocate additional hours of work to the relatively skilled, where possible. The relatively less vigorous recovery in the hours worked per week for the unskilled more than offset the increases in hourly earnings: average weekly wages of the unskilled fell relative to the weekly wages of the semi-skilled and skilled workers.

That the differential in real weekly earnings increased might suggest that the NIRA actually accentuated the inequality in earned income; this conclusion will not be supported by subsequent examination in this chapter.

The same patterns as were observed for differentials in noninal earnings reoccur for differentials in real hourly and real weekly earnings. In the nineteen-twenties, both REALHREARN (column 4) and REALWKEARN (column 5) increased after the trough of the recession; in the early nineteen-thirties, REALHREARN declined but REALWKEARN increased once the trough of the Great Depression was passed--and the industrial codes initiated. Again, the disparity between the 1920's and 1930's in the trends for differentials in hourly and weekly earnings can be, at least partially, attributed to specific provisions of the NIRA codes.

If a longer recovery phase is analyzed, as in Table III-14, then no significant qualitative patterns are altered.

To further quantify the impact of the codes on differentials in earnings and hours worked between unskilled male workers and more skilled workers, separate regressions were estimated for months during the business cycles of both the early 1920's and the Great Depression. As before, the estimates for the 1920's will be used as

a standard by which to compare the experience under the NIRA. The following equations were estimated for the months between June, 1920 and May, 1923:

- # R1  $RELHREARN_i = A + B \cdot (RECOV_i)$   
 # R2  $RELWKEARN_i = A' + B' \cdot (RECOV_i)$   
 # R3  $REALHREARN_i = A'' + B'' \cdot (RECOV_i)$   
 # R4  $REALWKEARN_i = A''' + B''' \cdot (RECOV_i)$   
 # R5  $HRSWORK_i = A'''' + B'''' \cdot (RECOV_i)$   
 # R6  $RELHRSWORK_i = A''''' + B''''' \cdot (RECOV_i)$

where,  $i$  = monthly time subscript

$RECOV_i = 0$  for the months between June, 1920 and April, 1921, i.e., months prior to the business trough;

$= 1$  for the months between May, 1921 and May, 1923.

For the months prior to May, 1921:

- # R1a  $RELHREARN_i = A + e_i$  where,  $e_i$  is assumed to be a normally distributed random error term with zero mean and constant variance.  
 # R2a  $RELWKEARN_i = A' + e_i$   
 # R3a  $REALHREARN_i = A'' + e_i$   
 # R4a  $REALWKEARN_i = A''' + e_i$   
 # R5a  $HRSWORK_i = A'''' + e_i$   
 # R6a  $RELHRSWORK_i = A''''' + e_i$

Therefore, the average value of RELHREARN prior to May, 1921 was equal to A. Similarly, the average values of

RELWKEARN, REALHREARN, REALWKEARN, HRSWORK, AND RELHRSWORK prior to May, 1921 equal  $A'$ ,  $A''$ ,  $A'''$ ,  $A''''$ , and  $A'''''$  respectively. For the months following April, 1921:

$$\begin{aligned} \# R1b \quad & \text{RELHREARN}_i = A + B + e_i \\ \# R2b \quad & \text{RELWKEARN}_i = A' + B' + e_i \\ \# R3b \quad & \text{REALHREARN}_i = A'' + B'' + e_i \\ \# R4b \quad & \text{REALWKEARN}_i = A''' + B''' + e_i \\ \# R5b \quad & \text{HRSWORK}_i = A'''' + B'''' + e_i \\ \# R6b \quad & \text{RELHRSWORK}_i = A''''' + B''''' = e_i \end{aligned}$$

Therefore, the average value of RELHREARN following April, 1921 was equal to  $A + B$ . Similarly, the average values of RELWKEARN, REALHREARN, REALWKEARN, HRSWORK, and RELHRSWORK following April, 1921 equal  $A' + B'$ ,  $A'' + B''$ ,  $A''' + B'''$ ,  $A'''' + B''''$ , and  $A''''' + B'''''$  respectively. Thus, the difference between the average value of the differential during the months prior to the business trough and the average value of the differential just following the trough is equal to the coefficients (B) associated with the RECOV variable:

$$\begin{aligned} \# R1c \text{ Average Value of RELHREARN Prior to May, 1921} &= A \\ \text{Average Value of RELHREARN After April, 1921} &= A + B \\ \text{Change in Average Value of RELHREARN} &= B \end{aligned}$$

Similarly, the change in the average value of RELWKEARN, REALHREARN, REALWKEARN, HRSWORK, AND RELHRSWORK equals  $B'$ ,  $B''$ ,  $B'''$ ,  $B''''$ ,  $B'''''$  respectively. Differentials will have changed significantly if the coefficients associated

with the RECOV variable are significantly different from zero.

Table III-15 provides the estimates of equations R1 thru R6. Note that in the nineteen-twenties the differential in real hourly earnings increased from twelve cents (in 1926 dollars) prior to the trough by approximately five cents (which is statistically significant). The gain in average hours worked by the unskilled relative to the more skilled was little more than two-tenths of one hour per week (statistically insignificant) and thus, was insufficient to offset the trend in hourly wage rates. Thus, the rise in REALWKEARN (by \$2.23) mirrored the differential in real hourly earnings. In nominal terms, the differential in hourly earnings increased by approximately eight percent (of the level of unskilled earnings); the differential in weekly earnings increased by approximately seven percent (both changes are statistically significant).

For the aftermath of the Great Depression, Table III-16 provides estimates of equations # R1 thru R6 for the period from June, 1932 to May, 1935. The RECOV variable is now defined to be equal to zero for the months between June, 1932 and April, 1933; and to be equal to one for the months after April, 1933. REALHREARN decreased by approximately 2.5 cents (rather than increasing by

TABLE III-15

SKILL DIFFERENTIALS: ESTIMATES OF EQUATIONS  
R1 THRU R6 FOR THE MONTHS BETWEEN JUNE,  
1920 AND MAY, 1923

Dependent Variable	Constant	RECOV	Standard Error of Regression	Mean of Dependent Variable
RELHREARN (decimal)	0.314* (.00566)	0.083* (.00711)	0.0188	0.367
RELWKEARN (decimal)	0.312* (.00637)	0.068* (.00800)	0.0211	0.355
RELHREARN (1926 dollars)	0.122* (.00509)	0.048* (.00640)	0.0169	0.153
REALWKEARN (1926 dollars)	5.75* (.199)	2.23* (.251)	0.662	7.16
HRSWORK (hours)	-0.191 (.181)	-0.246 (.227)	0.601	-0.347
RELHRSWORK (decimal)	0.0005 (.00393)	-0.007 (.00494)	0.013	-0.005

Numbers in parentheses are standard errors.

\*Denotes T statistics which are significant at the 5% confidence level.

TABLE III-16

SKILL DIFFERENTIALS: ESTIMATES OF EQUATIONS  
R1 THRU R6 FOR THE MONTHS BETWEEN JUNE,  
1932 AND MAY, 1935

DEPENDENT VARIABLE	CONSTANT	RECOV	STANDARD ERROR OF REGRESSION	MEAN OF DEPENDENT VARIABLE
RELHREARN (decimal)	0.395* (.00508)	-0.045* (.00610)	0.0169	0.364
RELWKEARN (decimal)	0.342* (.00635)	0.025* (.00762)	0.021	0.359
REALHREARN (1926 dollars)	0.241* (.00191)	-0.024* (.00230)	0.006	0.225
REALWKEARN (1926 dollars)	7.35* (.127)	0.82* (.152)	0.421	7.92
HRSWORK (hours)	-1.23* (.171)	1.72* (.272)	0.754	-0.0333
RELHRSWORK (decimal)	-0.0345* (.00552)	0.0437* (.00663)	0.0183	-0.004

Numbers in parentheses are standard errors.

\*Denotes T statistics which are significant at the 5% confidence level.

five cents as in the 1920's). Nonetheless, REALWKEARN increased--by eighty-two cents--due to a statistically significant 1.7 hour per week increase in the differential in average hours worked. The same patterns reoccur for the equations involving percentage changes in nominal hourly and weekly earnings. Though differentials in hourly earnings declined by 4.5 percent (compared to an eight percent increase in the 1920's), RELWKEARN increased by more than two percent.

Tables III-17 and III-18 show that the distinguishing characteristics of the 1920's and 1930's experiences are not significantly altered by restricting observation to only the initial months of economic recovery.

That the initial phase of economic recovery can exacerbate, not mitigate, inequalities in the distribution of income is amply demonstrated by the experience of the business cycle of the early 1920's. The NIRA codes attempted to reverse the 1920's pattern by narrowing the differential in hourly wage rates. The data in Tables III-15 and III-16 indicate that the legislation was successful, in this respect. Unfortunately, dramatic (and legally required) wage increases for workers earning near the minimum (unskilled) and the less dramatic (and not legally compelled) wage increases for the relatively more skilled workers had the unintended result of



TABLE III-17

SKILL DIFFERENTIALS: ESTIMATES OF EQUATIONS  
R1 THRU R6 FOR THE MONTHS BETWEEN JUNE,  
1920 AND DECEMBER, 1921

Dependent Variable	Constant	RECOV	Standard Error of Regression	Mean Of Dependent Variable
RELHREARN (decimal)	0.314* (.00804)	0.075* (.0124)	0.0267	0.345
RELWKEARN (decimal)	0.312* (.00698)	0.057* (.0108)	0.0232	0.336
REALHREARN (1926 dollars)	0.122* (.00631)	0.049* (.00973)	0.0209	0.143
REALWKEARN (1926 dollars)	5.75* (.212)	1.83* (.327)	0.703	6.52
HRSWORK (decimal)	-0.191 (.215)	-0.234 (.331)	0.712	-0.289
RELHRSWORK (decimal)	0.000523 (.00477)	-0.008 (.007)	0.0158	-0.0033

Numbers in parentheses are standard errors.

\*Denotes T statistics which are significant at the 5% confidence level.

TABLE III-18

SKILL DIFFERENTIALS: ESTIMATES OF EQUATIONS  
R1 THRU R6 FOR THE MONTHS BETWEEN JUNE,  
1932 AND DECEMBER, 1933

Dependent Variable	Constant	RECOV	Standard Error of Regression	Mean of Dependent Variable
RELHREARN (decimal)	0.395* (.00437)	-0.027* (.00674)	0.0145	0.384
RELWKEARN (decimal)	0.342* (.00675)	0.024* (.0104)	0.0224	0.353
REALHREARN (1926 dollars)	0.241* (.00183)	-0.021* (.00282)	0.00606	0.232
REALWKEARN (1926 dollars)	7.35* (.137)	1.00* (.211)	0.455	7.77
HRSWORK (hours)	-1.23* (.266)	1.21* (.320)	0.885	-0.721
RELHRSWORK (decimal)	-0.0389* (.0113)	-0.0345* (.00736)	0.0244	.409

Numbers in parentheses are standard errors.

\*Denotes T statistics which are significant at the 5% confidence level.

encouraging employers to substitute skilled labor for unskilled labor to an extent that would not have otherwise occurred.

In fact, during the months that the NIRA was law, the distribution of earned income seems to have become more unequal. However (from Table III-15), REALWKEARN increased, on average, by more than \$2.23 (in 1926 dollars) once the recovery was begun. In contrast (from Table III-16), during the NIRA, REALWKEARN increased by only eighty-two cents. The increase in REALWKEARN in the 1920's was almost three times what it was in the 1930's. Though the NIRA did not succeed in actually narrowing the differential in real weekly earnings, there is a suggestion that the diminished differentials in hourly wage rates, which can be attributed to the NRA, did succeed in keeping the distribution of earned income more equal than it would otherwise have been.

Of course, this hypothesis is not conclusively proven. The early nineteen-twenties is the only recovery with which to compare the nineteen-thirties experience and hence, does not provide proof of what the trend in earnings differentials would have been from 1933 to 1935 if no industrial codes had been imposed on the economy. However, the trends in nominal earnings are consistent with the proposed hypothesis. REALWKEARN increased by seven percent in the nineteen-twenties but by less than

three percent in the nineteen-thirties (RELHREARN increased by eight percent in the 1920's but declined by more than 4.5 percent in the 1930's). Nor is the evidence sensitive to the choice of an extended recovery phase. For the shortened recovery phase to which the data in Tables III-17 and III-18 refer, the same patterns emerge.

REALWKEARN increased by \$1.83 (in 1926) in the 1920's but by only one dollar in the 1930's; REALWKEARN increased by almost six percent in the 1920's and by less than 2.5 percent in the 1930's.

If code adoption decreased the differential in average hourly earnings, then decontrol (after the NIRA was declared unconstitutional) would have produced the opposite trends. Equation # R1 thru # R6 were re-estimated for the months between May, 1933 and June, 1936. The RECOV variable is now defined to be equal to zero for the months prior to (and including) May, 1935 (the date of the Schechter decision of the Supreme Court) and unity for those months following May, 1935. The results, presented in Table III-19, are fully consistent with expectations. (The coefficients associated with the RECOV variable represent the change in the average level of the differential between the NIRA period and the year following the Schechter decision.) REALHREARN increased after decontrol, though minimally, which reversed the effect of code

TABLE III-19

SKILL DIFFERENTIALS FOR EARNINGS AND HOURS:  
 JUNE, 1935 THRU JUNE, 1936

Month	RELHREARN (%)	RELWKREARN (%)	REALHREARN (1926 dollars)	REALWKREARN (1926 dollars)	HRSWORK (hours)	RELHRSWORK (%)
June, 1935	33.8	37.5	0.209	8.25	1.2	0.337
July	35.4	39.2	0.218	8.77	1.1	0.303
August	34.9	37.4	0.214	8.51	0.9	2.43
September	35.2	33.7	0.214	7.81	-0.3	-0.785
October	34.1	33.6	0.210	8.07	0.0	0.0
November	33.1	34.0	0.206	8.21	0.3	0.771
December	33.4	35.7	0.206	8.55	0.8	2.07
January, 1936	36.8	38.9	0.224	9.15	0.7	1.81
February	37.8	39.5	0.229	9.12	0.4	1.04
March	37.1	38.1	0.226	9.02	0.2	0.514
April	37.1	38.7	0.228	9.38	0.5	1.27
May	37.3	38.9	0.230	9.47	0.5	1.27
June	38.1	38.3	0.234	9.37	-0.9	-2.26

Source: Same as for Tables III-10, III-11, and III-12.

TABLE III-19a

AVERAGE VALUE FOR SKILL DIFFERENTIALS FOR 1933 THRU 1935

PERIOD	RELHREARN (%)	RELWKEARN (%)	REALHREARN (1926 dollars)	REALWKEARN (1926 dollars)	HRSWORK (hours)	RELHRSWORK (%)
May, 1933- May, 1935	35.0	36.7	0.217	8.17	0.492	0.922
June, 1935- June, 1936	35.7	37.2	0.219	8.74	0.415	0.675

Source: Calculated from Tables III-11, III-12a, and III-19.

TABLE III-19b

SKILL DIFFERENTIALS: ESTIMATES OF EQUATIONS  
R1 THRU R6 FOR THE MONTHS BETWEEN MAY,  
1933 AND JUNE, 1936

Dependent Variable	Constant	RECOV	Standard Error of Regression	Mean of Dependent Variable
RELHREARN (decimal)	0.350* (.00437)	0.007 (.00747)	0.022	0.352
RELWKEARN (decimal)	0.367* (.00564)	0.005 (.00964)	0.028	0.368
REALHREARN (1926 dollars)	0.217* (.00169)	0.002 (.00289)	0.00844	0.218
REALWKEARN (1926 dollars)	8.17* (.0934)	0.57* (.160)	0.467	8.36
HRSWORK (hours)	0.492* (.151)	-0.077 (.258)	0.755	0.466
RELHRSWORK (decimal)	0.00922* (.00349)	-0.00247 (.00597)	0.0175	0.00837

Number in parentheses are standard error.

\*Denotes T statistics which are significant at the 5% confidence level.

adoption; decontrol was also accompanied by a slight increase in the hours worked per week per unskilled male worker relative to the trend for more skilled male workers--again reversing the pattern that was discussed upon code adoption.

In Chapter II, it was estimated that the NIRA was responsible for an approximate twenty-six percent per year increase in average hourly earnings for all workers. Yet, the differential in average hourly earnings between unskilled workers and more skilled workers is observed to have decreased by less than three percent between May and December of 1933. The relative rigidity of occupational wage differentials in the United States has been amply documented. The NIRA period offers no obvious exception. Of course, wage differentials were not immune to the NIRA codes, as previously documented. It would seem, however, that labor markets did offset much of the initial impact of rising minimum wages as wages above the minimum,<sup>23</sup> adjusted upward. Conjecture about the nature of labor markets in this period are hazardous, however. No determination has been made of the extent to which wages above the minimum adjusted because of historical determinants in the labor market or because of political pressure exerted thru the NIRA codes to "equitably" adjust wages above the minimum. However, it should be noted that the



minimum wages were increased by legal mandate; in the majority of codes, employers were merely encouraged, but not legally required--to raise wages above the minimum. If the codes were operating in a dysfunctional labor market--where normal demand and supply mechanisms were inoperative or relatively impotent--then one would expect that the differentials in earnings would have been substantially diminished. That earnings differentials did not dramatically narrow suggests that the historical demand and supply determinants served to restore, in part, the pre-NIRA differentials.

## PAY DIFFERENTIALS BETWEEN MALES AND FEMALES

An issue over which industry and labor representatives debated was whether industry codes should provide lower minimum wages for special groups, such as female workers, southern blacks, the handicapped, or the elderly. In 1932, female hourly earnings in manufacturing averaged only sixty percent of the male rate; female weekly earnings averaged less than sixty-five percent of the male rate in manufacturing. Southern black males averaged less than three-quarters of the pay for white males. Industry spokespersons argued that lower minimum wages for female workers (as one example) were justified by "the difference in types of work performed by women,"<sup>24</sup> and vigorously opposed not only uniform minimum wage provisions for all workers, but also other attempts to eliminate existing wage differentials. Labor groups, notably representatives of the black community and women's organizations hoped that the codes would be the mechanism by which existing discriminatory practices by industry could be muted, if not abolished. For example, women's organizations hoped that the NRA would forever banish sex discrimination in

industry both with respect to opportunities for employment and wage rates.<sup>25</sup>

The NRA officials recognized the quandry: if, for example, blacks or women were to be hired at no less than a common minimum wage, then these groups might well suffer excessive unemployment. Employers might hire, instead, presently unemployed white males. However, to mandate lower minimum wages for blacks and female workers would seem to condone, if not contribute to, discrimination. Lower minimum wage rates for special groups in industry codes might also appear to be legal and governmental confirmation of the inferiority of the special groups involved. Alternatively, lower minimum wage rates might result in an (unintended) substitution of the special groups for those presently employed (such as white male workers).<sup>26</sup>

Black organizations were generally successful in their opposition to differentials in the minimum wage provisions of industry codes. However, the Cowles Commission estimated that "directly or indirectly because of minimum-wage provisions of codes, about 500,000 negro workers were on relief in 1934."<sup>27</sup> Similarly, less than one-half of the initial codes provided for the handicapped. The resulting inequities should not have been surprising, including the closing, in one of many

particular instances, of a factory employing only the elderly. Differentials with varying frequency and magnitude were provided for inexperienced (including learners and apprentices) workers and the elderly.<sup>28</sup>

The Women's Bureau of the Department of Labor and the Labor Advisory Board of the NRA both opposed lower minimum wages for female workers.<sup>29</sup> Consequently, over 450 codes provided that men and women performing equivalent jobs must receive equivalent pay. For example, one typical provision specified: "female employees performing substantially the same work as male employees shall receive the same rate of pay as male employees."<sup>30</sup> However, several of the initial codes set a minimum wage for women that was 2.5 to 8 cents per hour below the minimum wage provided for male workers.<sup>31</sup> The difference in the minimum wages specified for men and women averaged five cents. Though approximately three-quarters of all codes did not specify a lower minimum wage for women, special wage provisions for women were present in more than 159 codes (which covered more than sixteen percent of all employees covered by the NIRA). The NRA justified such provisions by appealing to custom: "Numerous differentials of various kinds can be found in the codes which it may be difficult to defend on purely logical grounds, but they represent long established customs."<sup>32</sup>

The structure of the numerous industrial codes represented an uneasy--and only implicit--compromise between industry, which opposed any attempt to reverse existing differentials in earnings between the sexes, and labor, which advocated legal sanctions against existing discriminatory practices in the labor market. The codes themselves offer few clues as to which representatives won the debate; several codes specified a lower minimum wage for women but all codes explicitly required equal pay for equal work. Further complicating the incidence of the special provisions for women was the absence of a lower minimum wage for women in the codes of those industries which employed a relatively high percentage of female workers. No differential in the minimum wage was provided for women in the textile, finance, service, and retail trades "because their wage minima were intended primarily for female workers"<sup>33</sup>-- and thus, set a level lower than otherwise. Though the NRA generally set the minimum wage for most workers at forty cents per hour, "in the codes for all the more important women-employing industries the minimum was not over thirty cents and in several of the largest of these it was twenty-five cents or less . . ."<sup>34</sup> The net influence of the NRA codes on the earnings differential between men and women is an empirical question, to which the data presented below is

designed to answer. It should be noted that even if women employed in industries covered by codes were benefited, the effect might be insignificant for all employed women in the economy: covered industries included only one-half of the employed women. Though the codes covered more than ninety percent of industrial workers, many of the exempted sectors were large employers of women: domestic services, professional services, agriculture. Table III-20 shows the distribution of women employees between NRA and exempted industries.

Table III-21 documents, for the 1920-1923 economic recession and recovery, the following differentials between male and female workers:

1) RELHREARNX: differential in nominal average hourly earnings as a percentage of the level of female hourly earnings;

2) RELWKEARNX: differential in nominal average weekly earnings as a percentage of the level of female weekly earnings;

3) REALHREARNX: differential in real average hourly earnings;

4) REALWKEARNX: differential in real average weekly earnings;

5) HRSWORKX: differential in average hours worked per week;

TABLE III-20

DISTRIBUTION OF THE EMPLOYMENT OF WOMEN  
BETWEEN NRA AND NON-NRA INDUSTRIES

I. EMPLOYMENT OF WOMEN ESTIMATED TO HAVE COME UNDER CODES:

Manufacturing	1,313,792
Clerical	1,244,526
Trade	855,699
Service	683,869
Communication	<u>235,259</u>
Total	4,333,145

II. EMPLOYMENT OF WOMEN NOT COVERED BY CODES:

Professional Services	1,526,234
Servants in Homes	1,422,928
Agriculture	909,939
Laundresses (not in laundries)	356,468
Dressmakers and Seam- stresses (not in factories)	157,928
Public Service	<u>17,583</u>
Total	4,391,080

Source: Pidgeon, Mary Elizabeth, "Employed Women Under the N.R.A. Codes." In U.S. Department of Labor, Women's Bureau Bulletin No. 130, pp. 6-7.

TABLE III-21

SEX DIFFERENTIALS FOR EARNINGS AND HOURS: 1920'S

Month	RELHREARNX (%)	RELWKEARNX (%)	REALHREARNX (1926 dollars)	REALWKEARNX (1926 dollars)	HRSWORKX (hours)	RELHRSWORKX (%)
June, 1920	56.1	72.7	0.144	8.76	5.3	11.8
July	55.2	76.5	0.147	9.05	6.0	13.5
August	57.6	82.2	0.152	9.49	6.7	15.3
September	57.1	78.5	0.153	9.18	5.7	13.0
October	55.8	80.6	0.150	9.27	6.6	15.4
November	55.4	81.8	0.149	8.95	6.5	15.9
December	51.9	81.1	0.141	8.69	7.1	17.8
January, 1921	59.2	79.4	0.206	11.05	4.9	12.2
February	58.3	68.9	0.210	10.40	2.9	6.9
March	57.1	69.3	0.209	10.72	3.4	8.1
April	56.4	65.1	0.215	10.70	2.7	6.4
May	54.5	57.6	0.209	9.66	1.1	2.5
June	53.7	57.7	0.208	9.74	1.5	3.5
July	53.7	61.5	0.203	10.03	2.6	6.0
August	51.3	58.9	0.189	9.53	2.6	5.9
September	49.0	56.0	0.181	9.12	2.3	5.2
October	46.5	57.1	0.172	9.42	5.6	12.5
November	47.4	57.4	0.177	9.50	3.3	7.4
December	47.6	56.4	0.176	9.41	2.9	6.4

(continued p. 197)



TABLE III-21 (continued)

Month	RELHREARNX (%)	RELWKEARNX (%)	RELAHREARNX (1926 dollars)	REALWKEARNX (1926 dollars)	HRSWORKX (hours)	RELHRSWORKX (%)
July, 1922	44.8	59.9	0.159	9.35	4.8	10.9
August	47.2	65.6	0.167	10.19	5.7	13.0
September	48.1	64.8	0.176	10.57	5.2	11.7
October	49.7	65.5	0.181	10.84	4.9	10.8
November	48.9	63.1	0.177	10.51	4.5	9.8
December	47.0	61.9	0.173	10.48	4.8	10.5
January, 1923	44.7	60.9	0.166	10.34	5.1	11.2
February	46.3	62.6	0.171	10.49	5.1	11.2
March	46.5	62.2	0.171	10.48	5.1	11.1
April	49.2	65.3	0.184	11.23	5.0	10.9
May	47.9	63.7	0.191	11.55	5.0	10.9

Source: Calculated from Beneu, M. Ada. Wages, Hours and Employment in the United States 1914-1936.

6) RELHRSWORKX: differential in average hours worked per week for female workers.

As with the differentials in earnings and hours between workers of different skills, the early 1920's will be used as a comparison to the aftermath of the Great Depression in order to evaluate any potential impact of the industrial codes. The average values for the differentials in earnings and hours between the sexes are given for three subperiods in the early 1920's in Table III-22.

The data show that RELHREARNX and RELWKEARNX both declined, on average, between the last months of the economic recession (June, 1920 thru April, 1921) and the initial months of the economic recovery (May, 1921 thru December, 1921). The same is true if the recovery phase is extended to include the months between May, 1921 and May, 1923. However, the trends for REALHREARNX and REALWKEARNX are no so unambiguous. It should also be noted that the average hours worked per week for women employees rose relative to that for male employees during this recovery.

Table III-23 provides similar data as in Table III-21 for the months between June, 1932 and December, 1935; Table III-24 lists the mean values for the differentials for the analogous subperiods as those used to discuss the 1920's experience. As in the recovery of

TABLE III-22

AVERAGE VALUES FOR SEX DIFFERENTIALS DURING THE 1920'S

PERIOD	RELHREARNX (%)	RELWKEARNX (%)	REALHREARNX (1926 dollars)	REALWKEARNX (1926 dollars)	HRSWORXX (hours)	RELHRSWORXX (%)
June, 1920- April, 1921	56.4	76.0	0.171	9.66	5.25	12.4
May, 1921- May, 1923	48.6	61.0	0.181	10.13	4.06	9.02
May, 1921- Dec., 1921	50.5	57.8	0.189	9.55	2.74	6.18

Source: Calculated from Table III-21.

TABLE III-23

## SEX DIFFERENTIALS FOR EARNINGS AND HOURS: 1930'S

Month	RELHREARNX (%)	RELWKEARNX (%)	REALHREARNX (1926 dollars)	REALWKEARNX (1926 dollars)	HRSWORKX (hours)	RELHRSWORKX (%)
June, 1932	60.7	59.6	0.310	9.98	0.1	0.306
July	60.7	49.3	0.304	8.28	-2.2	-6.53
August	60.6	51.6	0.298	8.42	-1.6	-4.78
September	63.5	46.8	0.303	8.38	-3.5	-9.23
October	62.3	43.5	0.300	8.26	-4.1	-10.3
November	62.5	50.0	0.300	9.28	-3.0	+7.71
December	63.3	47.7	0.308	8.77	-3.5	-9.26
January, 1933	64.6	57.3	0.320	10.26	-1.7	-4.68
February	65.4	55.5	0.326	10.25	-2.1	-5.65
March	65.8	53.2	0.322	8.87	-2.6	-7.58
April	63.9	62.0	0.316	10.38	-0.4	-1.17
May	61.7	59.9	0.293	10.62	-0.3	-0.80
June	62.0	60.6	0.277	11.48	0.3	0.728
July	59.5	59.0	0.263	11.12	0.0	0.0
August	45.1	46.2	0.237	9.24	0.4	1.05
September	39.4	41.0	0.223	8.29	0.6	1.69
October	40.5	44.0	0.229	8.81	1.0	2.82
November	41.1	40.5	0.233	7.82	-0.1	-0.294
December	41.5	45.4	0.239	8.64	0.9	2.71

(continued on p. 201)

TABLE III-23 (continued)

Month	RELHREARNX (%)	RELWKEARNX (%)	REALHREARNX (1926 dollars)	REALWKEARNX (1926 dollars)	HRSWORXX (hours)	RELHRSWORXX (%)
January, 1934	39.2	44.4	0.224	8.35	1.2	3.65
February	38.8	42.0	0.220	8.26	0.9	2.60
March	38.2	43.5	0.218	8.72	1.3	3.71
April	41.6	47.9	0.241	9.62	1.5	4.34
May	42.5	49.1	0.247	9.74	1.6	4.69
June	42.2	49.3	0.243	9.64	1.8	5.29
July	42.4	46.1	0.243	8.82	1.1	3.30
August	43.8	42.9	0.243	8.00	0.1	0.299
September	44.0	43.9	0.242	7.98	0.6	1.83
October	44.4	45.8	0.248	8.64	0.4	1.18
November	45.1	46.8	0.252	8.80	0.4	1.19
December	44.6	42.8	0.248	8.40	-0.4	-1.13
January, 1935	43.7	47.9	0.239	9.24	1.0	2.83
February	44.2	49.2	0.239	9.66	1.4	3.90
March	43.4	47.6	0.237	9.26	1.1	3.09
April	43.3	51.7	0.235	9.81	2.1	6.00
May	43.2	54.7	0.234	10.05	2.9	8.58

Source: Same as for Table III-21.

TABLE III-24

AVERAGE VALUES FOR SEX DIFFERENTIALS DURING THE EARLY 1930'S

Period	RELHREARNX (%)	RELWKEARNX (%)	REALHREARNX (1926 dollars)	REALWKEARNX (1926 dollars)	HRSWORKX (hours)	RELHRSWORKX (%)
June, 1932- April, 1933	63.0	52.4	0.310	9.19	-2.24	-6.05
May, 1933- May, 1935	44.6	47.7	0.242	9.16	0.872	2.53
May, 1933- Dec., 1933	48.9	49.6	0.249	9.50	0.350	0.988

Source: Calculated from Table III-23.

the 1920's, RELHREARNX and RELWKEARNX declined; in contrast to the 1920's REALHREARNX declined, though the trend in REALWKEARNX is, once again, ambiguous (the direction of change depends on the length of the recovery phase, though the magnitude of change is not large in either case). Also dissimilar to the 1920's was the behavior of average hours worked per week: in the 1930's, average hours worked per week for male workers recovered more quickly than for women.

The following equation was estimated, for each sex differential separately, for the months between June, 1920 and May, 1923:

$$\# R7 \quad \text{DIFFERENTIAL} = C + D \cdot (\text{RECOV}),$$

where, DIFFERENTIAL is replaced by each of the six previously defined sex differentials;

RECOV = 0, for the months between June, 1920 and April, 1921;  
1, for the months between May, 1921 and May, 1923.

The coefficients associated with the RECOV variable (column 2 of Table III-25) represent the change in the average value of the sex differential between the period prior to and the period following the trough of the 1920-1923 business cycle. The recovery phase of the 1920's is characterized by an eight percent decline in the differential in average hourly earnings and a fifteen percent

TABLE III-25

SEX DIFFERENTIALS: ESTIMATES OF R<sup>2</sup> FOR THE MONTHS  
BETWEEN JUNE, 1920 AND MAY, 1923

Dependent Variable	Constant	RECOV	Standard Error of Regression	Mean of Dependent Variable
RELHREARNX (decimal)	0.564* (.00813)	-0.078* (.0102)	0.0270	0.515
RELWKEARNX (decimal)	0.760* (.0139)	-0.150* (.0175)	0.0463	0.665
REALHREARNX (1926 dollars)	0.171* (.00633)	0.010 (.00795)	0.021	0.177
REALWKEARNX (1926 dollars)	9.66* (.226)	0.47 (.284)	0.750	9.957
HRSWORKX (hours)	5.25* (.205)	-1.19* (.579)	1.50	4.50
RELHRSWORKX (decimal)	0.124* (.0103)	-0.0338* (.0129)	0.0342	0.103

Numbers in parentheses are standard errors.

\*Denotes T statistics which are significant at the 5% confidence level.



declined in the differential in average weekly earnings. Both changes are statistically significant. The trends in the differentials in real earnings are not statistically significant--REALHREARNX REALWKEARNX increased by one cent and forty-seven cents (in 1926 dollars) respectively. Average hours worked per week for women rose more than one hour more than for men. The estimates of equation R7 for only the months between June, 1920 and December, 1921 (Table III-26), and where RECOV is redefined to equal unity for the months between May and December, 1921, do not indicate patterns contrary to those described above.

The estimates for the early 1920's do not indicate a deteriorating economic circumstance for women during the economic recovery: nominal hourly and weekly earnings, as well as average hours worked per week all rose more quickly for women than for men. Womens' real hourly and weekly earnings showed some tendency to lag--but the difference was not substantial (and statistically insignificant).

Equation R7 was also estimated for the months between June, 1932 and May, 1935 (Table III-27). RECOV is now defined to be zero for the months between June, 1932 and April, 1933; and unity for the months between May, 1933 and May, 1935. The coefficients associated

TABLE III-26

SEX DIFFERENTIALS: ESTIMATES OF R7 FOR THE  
MONTHS BETWEEN JUNE, 1920  
AND DECEMBER, 1923

Dependent Variable	Constant	RECOV	Standard Error of Regression	Mean of Dependent Variable
RELHREARNX (decimal)	0.564* (.008)	-0.059* (.0124)	0.0268	0.5388
RELWKEARNX (decimal)	0.760* (.0143)	-0.182* (.022)	0.0474	0.6835
REALHREARNX (1926 dollars)	0.171* (.00878)	0.018 (.0135)	0.0291	0.178
REALWKEARNX (1926 dollars)	9.66* (.2106)	-0.110 (.325)	0.698	9.614
HRSWORKX (hours)	5.25* (.201)	-2.51* (.706)	1.52	4.19
RELHRSWORKX (decimal)	0.124* (.0106)	-0.0622* (.0164)	0.0352	0.0977

Numbers in parentheses are standard errors.

\*Denotes T statistics which are significant at the 5% confidence level.

TABLE III-27

SEX DIFFERENTIAL: ESTIMATES OF EQUATION  
R7 FOR THE MONTHS BETWEEN JUNE,  
1932 AND MAY, 1935

Dependent Variable	Constant	RECOV	Standard Error of Regression	Mean of Dependent Variable
RELHREARNX (decimal)	0.630* (.0168)	-0.184* (.0202)	0.559	0.5024
RELWKEARNX (decimal)	0.524* (.0172)	-0.047* (.0206)	0.0571	0.491
REALHREARNX (1926 dollars)	0.310* (.00463)	-0.068* (.00556)	0.0154	0.263
REALWKEARNX (1926 dollars)	9.19* (.248)	-0.03 (.298)	0.825	9.17
HRSWORKX (hours)	-2.24* (.289)	3.11* (.347)	0.9616	-0.07
RELHRSWORKX (decimal)	-0.061* (.00390)	0.0858* (.00469)	0.0130	-0.0009

Numbers in parentheses are standard errors.

\*Denotes T statistics which are significant at the 5% confidence level.

TABLE III-28

SEX DIFFERENTIALS: ESTIMATES OF R7 FOR  
THE MONTHS BETWEEN JUNE, 1932  
AND DECEMBER, 1933

Dependent Variable	Constant	RECOV	Standard Error Of Regression	Mean Of Dependent Variable
RELHREARNX (decimal)	0.630* (.0204)	-0.141* (.0315)	0.0677	0.5706
RELWKEARNX (decimal)	0.524* (.0214)	-0.028 (.0330)	0.071	0.51216
REALHREARNX (1926 dollars)	0.310* (.0066)	-0.061* (.0102)	0.0219	0.284
REALWKEARNX (1926 dollars)	9.19* (.334)	0.31 (.515)	1.11	9.32
HRSWORKX (hours)	-2.24* (.314)	2.59* (.484)	1.04	-1.15
RELHRSWORKX (decimal)	-0.0605* (.00815)	0.0707* (.0126)	0.0270	-0.031

Numbers in parentheses are standard errors.

\*Denotes T statistics which are significant at the 5% confidence level.

with the RECOV variable now represent the change in the average value of the sex differentials between the period prior to and the period following the passage of the NIRA (and, approximately, the period before and after the business trough of the Depression). As in the 1920's, RELHREARNX declined, though by almost two and one-half times the amount registered in the earlier recovery. Also, RELWKEARN decreased by approximately five percent. Once again, the disparity in the sizeable decline in RELHREARN but only moderate decline in RELWKEARN is due to the more than three hours per week increase in the average hours worked per week by males relative to females. As with the previously discussed skill differentials, the codes do seem to have significantly narrowed hourly rates of pay between the sexes, but at some expense to the potential recovery of hours worked per week by female employees. Despite the reversal of the 1920's pattern with respect to hours worked per week per female employee, women did close the gap in real average weekly earnings. The three cent (in 1926 dollars) advance is small (and statistically insignificant) but should compare to the fifty cent loss (compared to men) in the 1920's.

The codes would not seem to have had a particularly strong impact on sex differentials in earnings. For those women who: (1) were covered by the codes, and (2) retained

at least partial employment, the gains made in hourly earnings were generally offset by the deleterious effect on average hours worked per week. It would be hazardous to place too much importance on the subtle differences observed in the behavior of weekly earnings for women between the experience of the 1920's and middle 1930's (though the differences in the patterns for hourly earnings and average hours worked can safely be attributed, at least in part, to specific provisions of the codes).

It would seem, therefore, that the compromises in formulation of code provisions with respect to sex differentials precluded sizeable redistribution of earned income toward women. Since the trend in earnings and hours discussed in this chapter refer only to those women who retained employment in industries covered by NRA codes, any net effect of the codes on the total employment of women would have had an additional impact on the distribution of earned income between male and female workers.

The conjectures about the largely offsetting impact of the NIRA codes on the relative average weekly earnings of male and female workers is confirmed by the data in Table III-29--which gives the percent by which women's weekly earnings fell below the men's for two groups of industries covered by the NIRA: 1) those

TABLE III-29

## SEX DIFFERENTIALS AND NRA MINIMUM WAGE PROVISIONS

	Percent That Women's Weekly Earnings Were Below Men's March, 1931	Percent That Women's Weekly Earnings Were Below Men's March, 1934
<b>I. Industries Under Codes With Different Minimum Wage Provisions For Male and Female Workers:</b>		
Automobiles, airplanes, etc	41.0	45.9
Leather	35.0	41.2
Miscellaneous paper goods	44.7	39.6
Paints and colors	48.6	37.5
Paper boxes and tubes	52.5	36.7
Pianos and other musical instruments	55.3	43.2
Pulp and paper	45.3	43.1
Shoes	46.4	40.8
Stone, clay, and glass	37.2	17.7
<b>II. Industries Under Codes Without Different Minimum Wage Provisions for Male and Female Workers:</b>		
Gloves, bags, canvas goods	49.7	37.4
Machinery and electrical apparatus	42.8	36.3
Printing and bookmaking	52.3	51.8
Textiles:		
Silk and silk goods	46.5	33.7
Woolens, carpets, felt	45.7	35.0
Knit goods, except silk	51.8	37.2
Clothing:		
Men's	49.9	43.8
Women's	49.8	49.4
Women's underwear	40.6	40.9
Laundering and cleaning	49.9	44.1

Source: Pidgeon, Mary Elizabeth, "Employed Women Under the N.R.A. Codes." In U.S. Department of Labor, Women's Bureau Bulletin No. 130, p. 116.

industries whose codes specified a lower minimum wage for women; and 2) those industries for which no differential in minimum wages was provided. On average, the percentage by which male weekly earnings exceeded female weekly earnings fell by less than seven percent between March of 1931 and March, 1934, a result fully consistent with the estimates of Table III-27. Interestingly, the difference between the two groups of industries was not statistically significant. Thus, the data in Table III-29 confirm the modest gains by women, relative to men. Also, the presence of differentials in the legally determined minimum wages is not associated with distinguishable economic performance by women. However, the two groups of industries are not random selections among all U.S. industries; the group without a legally prescribed sex differential for minimum wages is heavily represented by industries which employ an uncharacteristically high percentage of women. Thus, in some fashion, the NRA did provide lower minimum wages for a much larger percentage of women employees than might appear by mere observation of the code structure: where women were employed in large numbers, no differential was provided, but the one common minimum wage was set lower than otherwise; where women did not comprise a large fraction of the labor force, a lower minimum wage for female workers was specified in the industry code.



## NRA BIAS TOWARD CONCENTRATED INDUSTRIES AND STRONG UNIONS

Besides the hypothesis, discussed at the beginning of this chapter, that the NIRA was biased in favor of industry, a secondary claim has often been made that the NIRA was dominated by well organized and politically powerful interest groups such as trade associations, monopolists, oligopolists, or labor unions. As Robert Himmelberg concludes:

. . . the codes which Johnson and his associates in the mushrooming NRA bureaucracy approved contained, at the behest of the trade associations or other industry representatives which had negotiated them, a wide array of terms which influenced the dynamic of competition, always in the direction of enfeeblement. Soon Congressional critics were denouncing the codes on the grounds that they almost always led to price-fixing and in many instances injured small competitors and aided the natural advantage of the more powerful firms of codified industries.<sup>35</sup>

The NIRA code structure did not, according to this argument benefit all industry indiscriminantly. Rather, the large and well-organized industries gained economic advantage at the expense of the small and organized groups (including consumers). The codes, it has been

charged, "were being used by powerful groups to penalize and suppress small competitors, 'the little fellows'."36

Bernard Bellush has provided a recent exposition:

. . . unlimited relief was accorded most large businessmen from the start. . . . Over thirty industries won approval for restrictions on producing capacity through limiting construction and preventing the opening of closed plants. . . . In the first twenty codes, Johnson and his deputies established precedents for almost every conceivable kind of quasi-monopolistic practice injurious to the consumer.<sup>37</sup>

Even John F. Sinclair, vice-chairman of the National Recovery Review Board concluded that:

. . . many a smaller businessman feared to report his real troubles to his code authority because its members were the most powerful competitor in the small independent within the particular industry.<sup>38</sup>

Frequently, critics maintained that strong trade associations were able to dominate the code authorities and, thus, secure legal protection for cartelization agreements at the expense not only of consumers but also of the firms within the industry which were not members of the dominant trade association. (The legal protection for the cartelization depended not only from the fact that code violations (in other words, violations of the cartel agreement) could be prosecuted in the Courts, but also that the industry was immune from anti-trust laws

once industry codes were approved).

The claim that the economically or politically powerful and well-organized were able to gain relatively to the small, weak and unorganized took many forms. However, critics of the NRA too infrequently did not distinguish which (or both) of the following two arguments they were making:

1) that industries with well-organized trade associations or unions or industries which were not competitive (characterized by monopolistic or oligopolistic tendencies) were benefitted by the NIRA more than those industries which were highly competitive (and characterized by a large number of small, unorganized firms);

2) that within individual industries, the large firms or firms belonging to a well-organized trade association were able to gain advantages under the codes at the expense of the smaller, less well-organized firms within the same industry.

In the present section of this chapter, some evidence with respect to the first of the arguments will be reviewed; in the next section, evidence with respect to the second argument will be reviewed.

One popular claim was that industries with strong trade associations or labor unions were able to organize themselves quickly, agree upon specific code provisions,

and apply for immediate approval. Because the NRA was eager to have evidence of success in bringing the citadels of U.S. industry under its auspices, codes were approved which conferred unfair advantages to special interests within the industry (perhaps the unions or particular groups of firms). NRA officials wished to avoid time-consuming debates between industry representatives, labor representatives, and NRA administrators. Industries which could present a well-organized case during the initial months of hearings before the NRA were thereby able to secure many favorable provisions due to official reluctance to risk delaying ratification of the industry codes. In an attempt to test this hypothesis, earnings, hours, and employment data for May, 1933 and May, 1935 are given in Tables III-30 and III-31 for two groups of industries. The first group includes industries which were among the earliest to receive code approval (all prior to September 11, 1933). The second group includes industries which were among the last to receive code approval (approval after March 30, 1934). (May, 1933, of course represents the initial month of the NIRA; May, 1935 represents the final months of the codes.) In Table III-32, for each of the two groups of industries, the average rates of change between May, 1933 and May, 1935 are given for employment, payrolls, man-hours, average hourly wages

TABLE III-30

EARNINGS, EMPLOYMENT, HOURS FOR INDUSTRIES WHICH WERE AMONG THE  
 EARLIEST TO RECEIVE CODE APPROVAL (PRIOR TO SEPTEMBER 11, 1933)

Industry Group A	Date of Code Approval	Employ- ment	Pay- rolls	Man- hours	Average Hourly Wages (\$)	Average Weekly Wages (\$)
Cotton Textile	7/17/33					
May, 1933		89.4	81.0	103.4	.228	10.99
May, 1935		101.8	113.2	82.7	.394	13.23
Wool Textile	8/14/33					
May, 1933		88.4	82.6	99.5	.323	15.14
May, 1935		115.4	129.2	101.3	.496	17.94
Petroleum Refining	9/2/33					
May, 1933		95.5	96.5	100.4	.620	26.62
May, 1935		108.5	118.5	99.3	.789	27.38
Petroleum Refining (Crude Petroleum Producing)	9/2/33					
May, 1933		91.4	94.3	96.7	.636	28.18
May, 1935		122.1	131.1	102.3	.780	28.48
Hat and Suit	8/7/33					
May, 1933		82.3	58.7	68.7	.834	22.70
May, 1935		86.2	64.6	50.1	108.1	21.54
Shipbuilding and Ship repairing	8/5/33					
May, 1933		85.6	83.2	91.1	.556	20.39
May, 1935		138.4	170.4	147.8	.750	24.88
Iron and Steel	8/19/33					
May, 1933		86.4	80.1	87.2	.487	16.02
May, 1935		123.8	174.1	139.3	.663	22.65
Electrical Manufac- turing	8/15/33					
May, 1933		86.8	84.8	91.4	.526	19.48
May, 1935		130.0	156.3	134.9	.607	21.81
Sawmilling	9/4/33					
May, 1933		94.6	88.8	107.1	.299	13.05
May, 1935		110.0	111.4	88.5	.513	16.35
Automobile Manufac- turing	9/5/33					
May, 1933		90.5	100.8	107.3	.578	23.80
May, 1935		163.1	247.3	176.5	.727	27.11
Wool and Synthetic Fiber Producing	9/9/33					
May, 1933		87.6	83.2	94.2	.375	16.27
May, 1935		115.7	133.9	103.5	.522	19.35
Men's Clothing	9/11/33					
May, 1933		37.8	65.7	86.7	.390	12.03
May, 1935		109.0	133.4	82.3	.660	17.90

Index: 1933 = 100

Source: Calculated from data collected by the Division of Review,  
 National Recovery Administration.

TABLE III-31

EARNINGS, EMPLOYMENT, HOURS FOR INDUSTRIES WHICH WERE AMONG THE FIRST TO RECEIVE CODE APPROVAL (AFTER MARCH 30, 1934)

Industry Group B	Date of Code Approval	Employment*	Payrolls*	Man-hours*	Average Hourly Wages (\$)	Average Weekly Wages (\$)
Machinery and Allied Products	3/28/34					
May, 1933		79.9	72.2	76.2	.523	16.90
May, 1935		151.8	196.9	169.3	.629	22.89
Leaving	4/2/34					
May, 1933		105.7	114.5	123.6	.626	32.56
May, 1935		122.9	133.8	112.4	.810	31.95
Copper (Smelting and Refining)	4/26/34					
May, 1933		87.4	95.1	103.1	.467	23.07
May, 1935		190.9	207.2	182.0	.531	21.20
Iron Forging	5/21/34					
May, 1933		87.0	92.5	88.1	.454	18.46
May, 1935		145.8	183.4	150.5	.647	24.65
Painting	6/11/34					
May, 1933		62.2	64.2	71.5	.326	11.69
May, 1935		78.1	104.1	71.0	.406	14.15
Wheat Flour Milling	6/13/34					
May, 1933		96.2	97.8	107.8	.417	20.72
May, 1935		108.8	116.0	94.1	.545	20.72
Printing	6/18/34					
May, 1933		95.3	94.1	100.9	.429	21.51
May, 1935		112.7	118.8	102.5	.540	21.77
Textile Manufacturing	6/25/34					
May, 1933		90.4	86.0	95.3	.337	12.96
May, 1935		93.6	107.0	87.2	.447	15.53
Structural Steel and Iron Fabricating	7/22/34					
May, 1933		85.3	72.5	82.3	.403	12.02
May, 1935		130.4	161.6	131.5	.604	18.59
Commercial Vehicle Body	7/30/34					
May, 1933		98.3	104.7	102.3	.402	18.27
May, 1935		142.6	158.4	134.5	.506	19.34
Pharmaceutical and Chemical	11/5/34					
May, 1933		90.1	87.8	86.1	.472	18.83
May, 1935		107.3	117.4	103.5	.549	20.64
Plate Glass Manufacturing	12/31/34					
May, 1933		83.0	77.0	83.6	.494	17.85
May, 1935		165.1	205.3	175.7	.707	23.54

Index: 1933 = 100.

Source: Calculated from data collected by the Division of Review, National Recovery Administration.

TABLE III-32

AVERAGE RATES OF CHANGE OF EMPLOYMENT, EARNINGS, AND HOURS  
FOR INDUSTRIES WHICH RECEIVED ESPECIALLY EARLY  
OR LATE CODE APPROVAL

	Group A Industries: Early Code Approval (Prior to 9/11/33)	Group B Industries: Late Code Approval (After 3/30/34)
	Average, for the group, percentage change between May, 1933 and May, 1935 (%)	Average, for the group, percentage change between May, 1933 and May, 1935 (%)
Employment	33.7	46.9
Payrolls	67.0	78.6
Man-hours	15.1	39.2
Average Hours Worked per Week	-16.1	-6.78
Average Hourly Wages	41.5	29.1
Average Weekly Wages	18.3	16.9

\*Industries in group are listed in Tables III-30 and III-31.

Source: Calculated from Tables III-30 and III-31 and from Division of Review, National Recovery Administration.

and average weekly wages. The industries which were initially covered by the NIRA did not recover as quickly as the last industries to receive code approval (man-hours and employment increased, on average, less during the NIRA period for Group A than for Group B). The differences are not, however, statistically significant. Interestingly, average hourly and weekly wages increased more rapidly for the first group, due primarily to the presence of several industries with well-organized union representation (such as in cotton and wool textiles. See below for elaboration of the union influence.) If any group was able to secure economic benefits thru organization and early code ratification, it would seem to be the labor unions. Though the differences in the average rates of change of earnings and hours between the two groups of industries is not statistically significant, the differences are economically sizeable (large variation in the economic behavior within the groups preclude precise hypothesis testing).

To determine the influence of unions more directly, the trends in earnings and hours for employees in two groups of industries are given in Tables III-33 and III-34. The first group includes industries with strong union representation (according to the studies of the Temporary National Economic Committee) and the second group includes



TABLE III-33

**EARNINGS, EMPLOYMENT, AND HOURS FOR INDUSTRIES  
WITH STRONG UNION REPRESENTATION**

Industry: Union Group	Employ- <sup>*</sup> ment	Pay- <sup>*</sup> rolls	Man- <sup>*</sup> hours	Average Hours Worked Per Week	Average Hourly Wages (\$)	Average Weekly Wages (\$)
<b>Cotton Textile</b>						
May, 1933	89.4	81.0	103.4	48.0	.228	10.99
May, 1935	101.8	113.2	82.7	33.7	.394	13.23
<b>Wool Textile</b>						
May, 1933	88.4	82.6	99.5	46.4	.323	15.14
May, 1935	115.4	129.2	101.3	36.2	.496	17.90
<b>Bituminous Coal Mining</b>						
May, 1933	90.1	71.2	79.9	26.1	.452	11.41
May, 1935	110.9	130.0	83.9	23.1	.736	16.72
<b>Silk Textile</b>						
May, 1933	93.2	85.7	94.5	38.4	.321	12.80
May, 1935	88.1	101.2	78.9	33.9	.459	15.48
<b>Daily Newspaper Publishing Business</b>						
May, 1933	98.2	97.6	102.0	41.5	.759	31.93
May, 1935	103.5	110.5	95.9	37.0	.931	34.17
<b>Graphic Arts</b>						
May, 1933	95.0	95.9	96.5	37.3	.659	24.83
May, 1935	108.6	124.1	110.3	37.3	.739	28.19
<b>Wheat Flour Milling</b>						
May, 1933	96.2	97.8	107.8	49.1	.417	20.72
May, 1935	108.8	116.0	94.1	37.9	.545	20.72
<b>Baking</b>						
May, 1933	95.3	94.1	100.9	46.8	.429	21.51
May, 1935	112.7	118.8	102.5	40.2	.540	21.77

\*Index: 1933 = 100.

Source: Calculated from data collected by the Division of Review,  
National Recovery Administration.

TABLE III-34

EARNINGS, HOURS, AND EMPLOYMENT FOR INDUSTRIES  
WITHOUT STRONG UNION REPRESENTATION

Industry: Non-Union Group	Employ- <sup>*</sup> ment	Pay- <sup>*</sup> rolls	Man- <sup>*</sup> hours	Average Hours Worked Per Week	Average Hourly Wages (\$)	Average Weekly Wages (\$)
<b>Retail Trade</b>						
May, 1933	93.2	90.7	98.7	43.3	.403	14.37
May, 1935	108.5	116.7	100.1	37.7	.482	15.88
<b>Automotive Parts and Equipment Manufacturing</b>						
May, 1933	87.6	94.1	100.2	43.3	.488	31.30
May, 1935	179.3	301.1	172.5	36.8	.622	32.87
<b>Paper and Pulp</b>						
May, 1933	91.6	90.4	97.0	42.9	.411	17.65
May, 1935	120.5	134.1	113.4	38.1	.525	19.97
<b>Hotel</b>						
May, 1933	97.3	96.2	98.8	51.4	.230	12.61
May, 1935	116.4	124.8	110.1	47.9	.280	13.58
<b>Furniture Manu- facturing</b>						
May, 1933	84.6	74.0	37.0	38.1	.291	11.36
May, 1935	105.8	125.4	104.6	56.5	.423	15.46
<b>Rubber Tire Manufacturing</b>						
May, 1933	87.4	93.5	102.0	37.7	.584	22.19
May, 1935	114.8	142.7	108.5	30.6	.837	25.43
<b>Chemical Manu- facturing</b>						
May, 1933	86.7	86.6	91.6	42.9	.549	23.41
May, 1935	123.1	137.3	119.3	39.3	.638	25.07
<b>Cotton Garment</b>						
May, 1933	98.6	89.8	108.2	40.7	.248	9.78
May, 1935	111.4	143.4	95.8	31.9	.423	13.60
<b>Beet Sugar</b>						
May, 1933	37.9	42.1	35.4	45.1	.519	21.34
May, 1935	44.1	58.2	54.9	58.2	.630	22.63
<b>Petroleum Refining</b>						
May, 1933	91.4	94.3	96.7	44.1	.636	28.18
May, 1935	122.1	131.1	102.3	35.0	.780	28.48

\* Index: 1933 = 100

Source: Same as for Table III-33.

industries which the TNEC determined to have no strong union representation.<sup>39</sup> The average rates of change for hours and earnings of employees were calculated for the two groups and listed in Table III-35. Though the union group did realize larger increases in hourly and weekly wages, on average, the differences between the two groups are not particularly sizeable and are not statistically significant. A reasonable conjecture from both the political history of code formation and the data so far reviewed would be that the unions were critical to the formulation of the provisions in the initial codes that were approved by the NRA, but that much of the economic benefit (though not all), that they derived from the NRA codes were than spread to non-union labor as later codes mimicked provisions of the earlier agreements.

The more adamant criticisms of the NIRA and its subsequent administration concerned the domination, not by unions, but by monopolistically or oligopolistically controlled industries. It is interesting to observe that when reference is made only to the rate of change in wholesale prices, industries which were determined by the Temporary National Economic Committee to be concentrated were not able to raise their prices as quickly as those industries which the TNEC determined to be competitive.<sup>40</sup> For sixteen competitive industries, wholesale

TABLE III-35

AVERAGE RATES OF CHANGE OF EMPLOYMENT, EARNINGS,  
AND HOURS FOR INDUSTRIES WITH PARTICULARLY  
STRONG OR WEAK UNION REPRESENTATION

	Industries With* Strong Union Representation	Industries Without* Strong Union Re- presentation
	Average, for the group, percentage change between May, 1933 and May, 1935	Average, for the group percentage change between May, 1933 and May, 1935
	(%)	(%)
Employment	14.4	29.4
Payrolls	39.1	53.8
Man-hours	-3.59	30.9
Average Hours Worked Per Week	-15.3	-9.10
Average Hourly Wages	40.5	31.6
Average Weekly Wages	16.0	14.3

\*Industries in group are listed in Tables III-33 and III-34.

Source: Calculated from Tables III-33 and III-34.

prices increased, on average, by almost fourteen percent between 1933 and 1935. For nine non-competitive industries, wholesale prices increased by less than six percent. Of course, the less vigorous recovery of wholesale prices does not of itself prove that the concentrated industries fared less well under the NIRA codes; no reference has been made to possible disparate patterns in costs or productivity or other economic variables for the two groups of industries. Nor, do the trends in wholesale prices add evidence that large industries gained relatively to small industries. The rate of increase in wholesale prices for a sample of eight small industries between 1933 and 1935 actually exceeded the rate of increase for a sample of five large industries (4.3% for the large industries and ten percent for the group of small industries). However, the small size of the samples precluded precise hypothesis testing.

Trends in profits and national income (total factor costs) do, on the contrary, suggest the possibility that concentrated industries did gain relatively to unconcentrated industries. A sample of twenty-four industries, was divided into two groups: those the TNEC judged to be competitive and those the TNEC judged to be concentrated.<sup>41</sup> For the competitive industries, nominal profits increased, on average, by 120 percent;

for the concentrated industries, nominal profits increased by 188 percent between 1933 and 1935. Similarly, national income recovered more vigorously in the concentrated group (94.7 percent) than in the competitive group (74.9 percent). These differences in the profit and national income trends of the two groups are not statistically significant, though economically sizeable. (Again, small sample sizes and large variation among the industries did not allow for a powerful statistical test of the hypothesis that the rates of change were identical for the two industry groups.)

For a sample of fourteen industries, divided between small and large industries (according to the number of employees), profits did increase faster between 1933 and 1935 for the larger industries (not statistically significant) but national income recovered less quickly for this group (national income increased by eighty percent for the group of small industries, on average, and by an average of 70.2 percent for the group of large industries).

Though the evidence reviewed for these small samples is not conclusive, there is a suggestion that concentrated industries might have done relatively well during the NIRA period but that no evidence supports the claim that large industries did similarly well.

It should be noted that even if the data would have shown a clear pattern of economic advantage for concentrated industries during the NIRA period, nothing so far presented could prove that the favorable economic performance was due mainly to the code structures or administration.

## NRA BIAS AGAINST SMALL BUSINESS FIRMS

Section VII reviewed, among other issues, the evidence, however inconclusive, that large or concentrated industries took particular advantage of the code authorities (relative to competitive industries). However, there is voluminous testimony before and investigations by the NRA that document the extent to which large and politically or economically powerful corporations within individual industries controlled the design and administration of their industry's code. Though the evidence is difficult to quantify, on balance, the powerful do seem to have advanced their economic position at the expense of the small and unorganized firms within the same industry.

Few studies of the process by which the National Recovery Administration approved, administered, and enforced the industrial codes have failed to document at least the political control by industry representatives, in general, and by representatives of large corporations, in particular. As previously noted, the composition of the agencies responsible for administering (and writing)



individual codes were dominated, frequently, by members of pre-existing (prior to the NIRA) trade associations; small, unorganized industry members, labor, and consumers were frequently under represented or excluded entirely.<sup>42</sup>

The claim that the competitive position of the relatively small or unorganized industry members was compromised by the manner in which the NIRA was implemented does not rest solely on the observation that controlling agencies were dominated by representatives of big business. Rather, studies by both independent researchers and the NRA's own research division have unveiled a pattern--common to many industries--of specific code provisions which actually proved deleterious to small corporations. Competitive forces, with some regularity, were muted; oligopolistic control fostered.

Among the specific provisions that appeared in many codes and which, in numerous instances, differentially burdened small businesses were:

- 1) open-price procedures, which would, however, harm small business only to the extent that they were also high-cost producers;

- 2) product standardization, which, in many cases, eliminated specialty services offered by small business;

- 3) limitations on new products and industries,

which precluded competition by non-established firms;

4) elimination of price competition, so that small firms providing, for example, inferior products could not offer the offsetting advantage of lower prices.<sup>43</sup>

The National Recovery Review Board, appointed by President Roosevelt and chaired by Clarence Darrow, documented numerous specific instances in which small business had been oppressed by codes of "fair competition" that had been drafted and administered by representatives of big business. In its three reports to the President of the United States were the following findings:

1) in the footwear division of the rubber manufacturing industry, the only discounts allowed by the code were those that were unavailable to the customers of the small companies;<sup>44</sup>

2) in the motion picture code, independent exhibitors were disadvantaged by the provisions which forced them to buy short reels and news reels along with the feature films;<sup>45</sup>

3) in a remarkable admission, a code author-- from a committee consisting only of members from large manufacturers of ice--denied an application by small firms to expand production capacity because "any increase in production of flake ice would be further used in attempted competition with the product of existing ice plants;"<sup>46</sup>

4) the bituminous coal code prohibited a price differential according to the (undesirable) sulfur content of coal. Small corporations--whose coal generally contained a higher concentration of sulfur were therefore forced to sell at the same fixed (by code provision) price in competition with those selling a better grade of coal. The competitive position of the sellers of low-grade coal was thereby destroyed by denying them the possibility of lowering the price they charged for their inferior product. Furthermore, the discount allowed for unwashed (or raw) coal by the small companies was insufficient to preserve their competitive position compared to the washed coal of the larger concerns.<sup>47</sup>

5) Another example of discriminatory code provisions includes the prohibition against the use of second-hand material in the bedding manufacturing industry (despite assurances by public health authorities that the prohibitions were unnecessary).<sup>48</sup>

The National Review Board identified case after case of codes, often by providing only inadequate allowances for price differential according to conditions, locality, and costs, which benefited the relatively large and well-organized corporations at the direct expense of smaller corporations. The Review Board concluded that:

When the time comes under the NRA to prepare a code and to provide for its administration, the larger units

controlling the national association write the code and then turn their national governing body into the authority to administer the code.

And in every instance the code so prepared has been found to hamper or to eliminate the small unit and leave the business field open to the better success of the larger.<sup>49</sup>

Not everyone agreed fully with the National Recovery Review Board's conclusions. In fact, one of the members of the National Recovery Review Board, John F. Sinclair, denounced his own committee's report as "inconclusive, incomplete, and at times misleading and unreliable."<sup>50</sup> Donald Richberg, general counsel of the NRA and later NRA Administrator, concurred. And both Charles Roos (a former director of research for the NRA) and Arthur M. Schlesinger, Jr. also accused the National Recovery Review Board of bias, carelessness, and negligence (though conceding that many of its charges had been substantiated).<sup>51</sup> In particular, Roos claimed that the Darrow committee failed to consult relevant information (that had already been collected and analyzed by the Research Division of the NRA) which pertained to the charges of monopolistic practices under investigation:

In view of these considerations it is difficult to avoid the conclusion that the board consisted largely of men with preconceived opinions of NRA code operation, determined to make these public at any cost.<sup>52</sup>

Roos also emphasized that the NRA made special attempts to protect the small businessman by prohibiting unjustified lawsuits, restricting the use of company scrip and quantity discounts, and publishing otherwise unavailable industry information. Specifically, Roos cited specific rulings of the NRA which aided particular small business interests. For example, the NRA restricted both the use of block booking by motion picture distributors and the purchase of exclusive rights by any one such distributor.<sup>52</sup>

However, Roos did concede that code provisions, which he claimed were intended to benefit small business, were sometimes deleterious to the very interests they were designed to protect. He specifically refers to codes that prohibited sales below costs (prohibition of loss leaders), open-price filing, and the limitations on credit that could be offered by sellers (which harmed those small firms which required credit for their purchases from, for example, wholesalers).<sup>54</sup>

Equally important, Roos substantiates the findings and conclusions of the Darrow committee in at least three of its case studies (the iron and steel, lumber and timber products, and cleaning and dyeing codes).<sup>55</sup> Roos also suggested that the expense of NRA programs (such as data filing, cost accounting, and wage hikes) fell

disproportionately on small business, which were less capable of securing bank loans and whose capital had been particularly depleted during the Depression. And he confirmed the use to which representatives of large business on code authorities had been able to use information collected by the NRA for its own behalf.<sup>56</sup>

The National Recovery Review Board's findings, of course, were not idiosyncratic. Several investigations of industrial regulation under the NIRA found a pattern by which:

Certain code authorities, for example, manipulated price schedules within their industry--e.g. setting favorable prices for certain products and unattractive prices for other products--in ways which helped the companies dominating the code authority and hurt the rest.<sup>57</sup>

And although Roos and the NRA itself did produce some examples of its success in protecting small business, the qualitative evidence does suggest a consistent pattern of domination and regulation to the economic advantage of those businesses which belong to well-established trade associations or were otherwise powerful within their respective industries.

## CONCLUSIONS

This chapter documents many significant redistributive trends that can confidently be attributed, at least in part, to the structure and administration of the industrial codes associated with the National Industrial Recovery Act. The real hourly earnings of labor were substantially increased, as the NRA had intended, notwithstanding the findings of previous studies based on the unimpressive actual changes in real wages during the NIRA period. Real wages, in comparison to what they would have been in the absence of the codes, were significantly increased. Also, there is evidence that the NIRA did significantly diminish the hourly and weekly wage differentials between employees of different skills but had only a moderate impact on the differentials in weekly earnings between male and female workers (despite a sizeable narrowing of the sex differential in hourly rates).

Despite the positive impact on real wages and the narrowing of the differential in wages between employees of different skills, the codes did, in some

respects, promote more inequality. There is ample documentation, though little quantifiable evidence, that the codes did favor the relatively large corporate interests at the expense of the small and unorganized members within.

To be sure, the evidence presented in this chapter is insufficient to render a judgment about the ultimate redistributive impact of the NIRA. Whether the codes produced more equality in the distribution of earned income, or whether the NIRA was relatively advantageous to labor cannot be decided solely on the basis of the two-year, short-run horizon of this study. To generalize about the net impact of the NIRA for the U.S. economy, the horizon would have to be extended to include the years after 1935. After all, the cartelization impetus and monopolistic influences generated by the codes did not dissolve immediately with decontrol. The evidence toward the end of Chapter II disposed of any such naive supposition. However, the final reckoning will not be a trivial undertaking. Estimates of the long-run redistributive impact of the NIRA will necessarily involve, among other problems, the determination of the relative long-run benefit of the impetus to industrial unionization (and subsequent contribution to labor--unionized and otherwise) versus the long-run implication of



suppressing competitive forces in industry. In addition, to distinguish the NIRA's affects from those of subsequent New Deal legislation (for example, The National Labor Relations Act) would be exceedingly difficult.

## CHAPTER III FOOTNOTES

1. Section II, Chapter I of this study.
2. United States National Recovery Administration. Report of the President's Committee of Industrial Analysis, pp. 106-142.
3. Lyon, et al. The National Recovery Administration: An Analysis and Appraisal, p. 25.
4. Lyon, et al., op. cit., p. 139.
5. Bellush, Bernard, The Failure of the NRA, p. 45.
6. Section III, Chapter I, of this study. And Bellush, op. cit., pp. 45-48.
7. Lyon, et al., op. cit., pp. 788-789
8. Ibid., p. 796.
9. Bellush, op. cit., pp. 56-57.
10. Terborgh, George, Price Control Devices in NRA Codes, p. 144.
11. Bellush, op. cit., p. 151.
12. Roos, Charles F., NRA Economic Planning, p. 444.
13. Bellush, op. cit., p. 161.
14. This sentence, the structure of which is repeated in this chapter, should be interpreted as follows: the average value for hours worked per week per employee was determined for the months between June, 1920 and April, 1921; similarly the average value for this variable was determined for the months between May, 1921 and May, 1923. The sentence states that the average values differed by 2.5 percent.
15. Lyon, et al., op. cit., p. 833.
16. United States National Recovery Administration (Simon Whitney), The Shorter Work Week, pp. 14-30.

17. Roos, op. cit., p. 164.
18. United States National Recovery Administration, Report of the President's Committee of Industrial Analysis, pp. 125-127.
19. Ibid., p. 127.
20. Ibid., pp. 127-139. Marshall, Leon C., Hours and Wages Provisions in NRA Codes. United States National Recovery Administration, Work Materials No. 56 (Minimum Price Regulation Under Codes of Fair Competition).
21. Beney, M. Ada., Wages, Hours, and Employment in the United States 1914-1936, pp. 17-18.
22. That is to say, the differential increased when the average value for the final months of the recession phase is compared to the average value for the initial months of the recovery phase.
23. Wages above the minimum refer to wages of workers who earn more than the minimum wage rate.
24. United States National Recovery Administration, Report of the President's Committee of Industrial Analysis, p. 130.
25. Ibid., pp. 130-133.
26. Roos, op. cit., pp. 172-176. And Bellush, op. cit., pp. 146-150.
27. Roos, op. cit., p. 173.
28. Ibid., pp. 172-176.
29. Lyon, et al., op. cit., p. 339.
30. Pidgeon, Mary Elizabeth. "Employed Women Under N.R.A. Codes." In United States Department of Labor, Women's Bureau Bulletin No. 130, p. 20.
31. Roos, op. cit., p. 174.
32. Pidgeon, op. cit., p. 13.

33. United States National Recovery Administration, Report of the President's Committee of Industrial Analysis, p. 130.
34. Pidgeon, op. cit., p. 9.
35. Himmelberg, Robert. R. The Origins of the National Recovery Administration: Business, Government, and the Trade Association Issue, 1921-1933, p. 3.
36. Lyon, et al., op. cit., p. 709.
37. Bellush, op. cit., p. 47.
38. Quoted in Bellush, op. cit., p. 145.
39. The groups were determined from the evidence provided in Lewis, H. Gregg, Unionism and Relative Wages in the United States; Wolman, Leo, Ebb and Flow in Trade Unionism; and the investigations of the Temporary National Economic Committee.
40. Wilcox, Clair, Competition and Monopoly in American Industry (Temporary National Economic Committee Monograph No. 21), Wilcox uses the following definitions of competitive and concentrated markets:  
 Competitive Markets: industries selling their products on a national market in which the four largest firms produced less than a quarter and the eight largest firms less than a third, by value, of the total output in 1935 (p. 29).  
 Concentrated Markets: industries in which the four largest firms produced more than two-thirds, by value, of the total output, in 1935 (pp. 115-116).
41. Ibid.
42. Section III, Chapter I, of this study.
43. National Recovery Review Board, First, Second and Third Reports to the President of the United States. And Roos, op. cit., pp. 374-416.
44. National Recovery Review Board, First Report to the President of the United States, pp. 3-4.
45. Ibid., pp. 5-8.
46. Ibid., p. 20.

47. Ibid., p. 23 ff.
48. National Recovery Review Board, Second Report to the President of the United States, pp. 7-8.
49. Ibid., p. 5.
50. Roos, op. cit., p. 377.
51. Ibid. And Schlesinger, Arthur M., Jr. The Coming of the New Deal, p. 133.
52. Roos, op. cit., p. 409.
53. Ibid., p. 405.
54. Ibid., pp. 405-408.
55. Ibid., pp. 409-415.
56. Ibid., pp. 405-406.
57. Schlesinger, op. cit., p. 168.

**CHAPTER IV: SOME MACROECONOMIC EFFECTS  
OF THE NIRA INDUSTRIAL CODES**

This chapter, divided into eight sections, analyzes some of the macroeconomic impacts of the National Industrial Recovery Act industrial codes. Section I reviews the conclusions of some previous histories of Title I of the NIRA. Section II discusses some simple analytics of macroequilibrium and the NIRA codes. Section III analyzes the economic consequences of the NIRA-induced inflation in the presence of the independent monetary expansion during the NIRA period. Section IV analyzes the macroeconomic impact of the NIRA-induced diminution of real wealth. Section V estimates the impact of the NIRA-induced relative wage increase on employment. Section VI estimates the effect on spending of the redistribution of income toward labor. Section VII discusses the role of the proposed and implemented NIRA codes on business expectations. Section VIII provides a summation and conclusions.

## I

SOME PREVIOUS ANALYSES OF THE  
MACROECONOMIC IMPACT OF THE NRA CODES

Few New Deal historians have attributed much importance to Title I of the National Industrial Recovery Act for influencing the course of the recovery from the Great Depression. While the ideological and political ramifications of the codes have been thoroughly explored by a plethora of historians, economists have generally confined their analysis to Title II (Public Works and Construction Projects) in order to ascertain the impact on employment and output.

Some economists--particularly Armen Alchian, Milton Friedman and Anna Schwartz, and Kenneth Roose-- have recognized the possible recessionary consequences of the many New Deal regulations (including the NIRA) which autonomously raised wages and prices.<sup>1</sup> However, these studies have not analyzed the particular provisions of the NIRA. Consequently, the precise mechanisms by which codes affected the economy and, most importantly, the quantitative importance of the codes was left undetermined.

Most of those who have considered the macro-economic impacts of the codes have either dismissed their



importance or considered them to have been weakly salutary. In a study completed in 1935, George Filipetti and Roland Vaile, for example, found that:

In other words, there was practically no expansion in purchasing power, that is, in the quantity of goods that could be bought either by the individual factory employee or by all of the factory employees taken together.<sup>2</sup>

As proof, Filipetti and Vaile cite the following data:

By the end of 1934 the dollar volume of goods sold had expanded, increasing from forty-nine percent of the 1926 volume in 1933 to sixty percent by the close of 1934. . . . there had also been an increase in the physical volume of goods sold, although it was somewhat less than the increase in dollar volume. The increase was not, however, traceable to the operation of the NRA, but to the effects of the other alphabetical agencies of the New Deal and the 'created' purchasing power of the federal government.<sup>3</sup>

In a more recent study, Ellis Hawley concludes:

In terms of recovery to be sure, the economy was in considerably better shape in 1935 than it had been in 1933. . . . The gains were certainly limited ones, and it was doubtful that even those could be credited to the NRA. More than likely they were due much less to the NRA codes than to the spending and relief programs, and the working of natural recuperative forces.

What the NRA might be credited with was a sort of holding action, a program that for a season did provide a psychological stimulant and help check the deflation spiral,

prevent the further erosion of labor standards, eliminate child labor, and implement the share-the-work idea. There was little about it that could generate further expansion. . . .<sup>4</sup>

Historians have often concurred in these conclusions. Arthur M. Schlesinger Jr. is not untypical when he argues:

Indeed it is hard to resist the conclusion that the question of price policy per se consumed far more time in NRA (and far more space in subsequent analyses of NRA) than its importance warranted. . . . NRA price-fixing could do nowhere near the damage its critics supposed; nor would purging the NRA codes of every word tainted with price protection have had the effect the critics predicted. The ending of the NRA price-fixing would certainly not, for example, have induced much expansion. The problem here was not the level of price, but the gross failure of demand, and this was something that NRA by itself could not reverse (emphasis added).<sup>5</sup>

Finally, Schlesinger argues:

Thus its apparatus of codes, for all their defects, did succeed in placing a floor under the wage-price spiral which threatened in 1933 to take everything to chaos.<sup>6</sup>

But as with most previous studies, Schlesinger finally proclaims the relative impotence of the industrial codes:

Beyond this [work spreading] however, NRA's strictly economic contributions to recovery were limited. It represented a holding action, not a positive stimulus. . . . The more enduring achievements of NRA lay not in the economic but in the social field.<sup>7</sup>

The evidence presented in this chapter is insufficiently definitive to incontestably prove or disprove the contention that the NIRA was not critical in determining the course of the economic recovery from the Great Depression. However, evidence will be provided which indicates that the NIRA might have had a sizeable contractionary impact on the economy. If that were true, then the NRA's importance was not relegated to only the "social field."

Common to most of these previous analyses has been, once again, a preoccupation with discerning a break in the trend of output and employment after code initiation. However, without an explicit model of what output and employment would have been in the absence of the codes, no definitive statement can be made as to the macroeconomic impacts of the industrial codes. The analysis provided in this chapter will analyze the extent to which the NIRA-induced increase in nominal wages and prices, as demonstrated in Chapter II, had a sizeable contractionary impact on the economy. By reducing the real money supply and diminishing real wealth, for example, the industrial codes caused a reduction in output and employment. Furthermore, the code-induced rise in the real wage rates, as analyzed in Chapter III, encouraged firms to reduce employment even further. These contractionary consequences of the codes

were offset, in part, by the increase in consumption due to the redistribution of income toward labor that was attributable (according to the analysis in Chapter III) to the NIRA. Subsequent sections on this chapter will analyze other mechanisms by which the codes influenced macroeconomic equilibrium.

## II

## MACROECONOMIC EQUILIBRIUM AND THE NIRA CODES

Economists recognize a number of mechanisms by which generalized wage and price regulations could affect trends in macro-economic variables such as output, employment, and average prices. Though some of the macroeconomic affects might be quantified, only qualitative evidence will be, in general, available with respect to others.

Of course, many factors, other than the industrial codes, influenced macroeconomic equilibrium during the NIRA period. This chapter analyzes the extent to which the industrial codes--even if all other economic variables were unchanged from their 1933-1935 levels--independently affected the levels of real output and employment during the NIRA period.

This section will discuss a general model that incorporates some of the major mechanisms by which the codes could be expected to have affected macroeconomic equilibrium. Of particular interest will be the manner in which the codes, by significantly raising wages and prices and thereby diminishing the real money supply, could have altered the equilibrium level of both output and

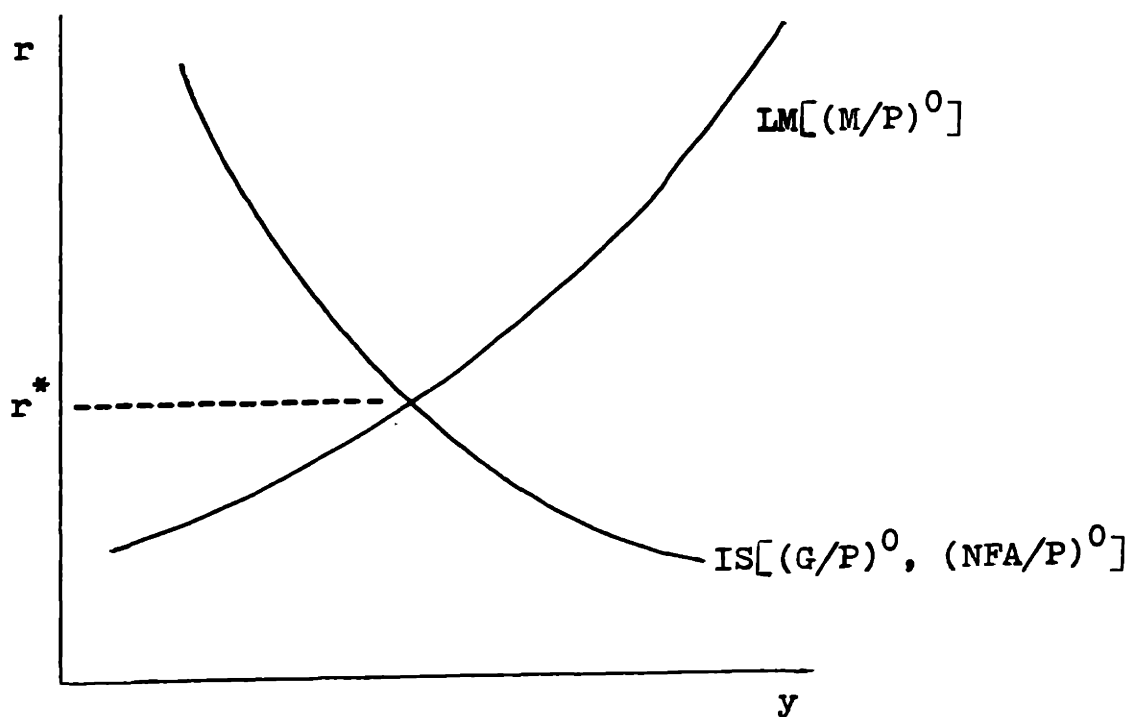
employment. Other mechanisms by which the codes could have affected employment (for example, by influencing the expectations of individuals) will be analyzed in subsequent sections of this chapter.

All macroeconomic models recognize that the mutual determination of the (static) equilibrium levels of output, employment, and (average) prices depends on both aggregate demand and aggregate supply.<sup>8</sup> Figure IV-1 displays a version of the familiar IS-LM determination of simultaneous equilibrium in the goods market and money market (assuming only two monetary assets--money and bonds). The equilibrium point A represents the only combination of interest rates and real income that is consistent with equilibrium in both the goods and money markets (when only aggregate demand is considered; i.e., supply considerations are ignored by assuming that prices are fixed).

The IS curve is drawn for a fixed exogenous amount of government spending and an exogenous total of net financial assets of fixed money value. Unlike some versions of the IS-LM models of macroeconomic equilibrium, the total of net financial assets is included as a determinant of the IS curve in order to explicitly allow for the direct effect of real net financial assets on aggregate demand.

FIGURE IV-1

DETERMINATION OF THE EQUILIBRIUM LEVELS OF REAL OUTPUT  
AND THE INTEREST RATE (ASSUMING FIXED PRICES)



where:

$r$  = interest rate

$y$  = real income

$(M/P)^0$  = fixed real money supply

$(G/P)^0$  = fixed real government budget

$(NFA/P)^0$  = fixed real total of net financial assets  
(of constant money value)

The negative slope reflects the lower equilibrium level of real output that would accompany a rise in interest rates. With prices fixed at  $P^0$ , and the government budgetary impact fixed at  $(G/P)^0$ , equilibrium in the goods market occurs at the level of output which generates an equal amount of spending; otherwise inventories either accumulate or diminish in unintended fashion. As interest rates rise (exogenously), consumption and investment spending are presumed to fall, at any given level of income. Thus, the level of income which generates an equal amount of aggregate spending also falls--to a point on the IS curve to the left of the initial equilibrium.

An increase in (real) autonomous spending (of consumer, investment or government spending) or an increase in the relevant marginal propensities to spend out of income will increase, for any given level of interest rates, the real amount of spending; therefore, equilibrium occurs at a higher level of real output. The IS curve shifts outward.

The positive slope of the LM curve, drawn for a fixed supply of money (nominal and real), reflects the fact that as income rises, interest rates must also rise in order to maintain equilibrium in the money market. Rising interest rates decrease the real demand for (non-interest bearing) money, for any given level of income.



If income rises, and therefore the quantity of money demanded rise, equilibrium can be reestablished only at higher interest rates so that the quantity of money demanded declines to its original (equilibrium) level.

If the (real) quantity of money is increased, the interest rate at which excess demand in the money market will be zero, for any given level of real output, will be lower--the entire LM curve shifts downward.

Only at A in Figure IV-1, a point on both curves, will there be equilibrium in both money and goods markets.

Assuming the slopes of the two curves are as shown, and the excess demand (supply) for money will be accompanied by a rise (fall) in interest rates and that excess demand (supply) of goods will be accompanied by rising (falling) rates of production, then equilibrium (point A) will be approached even if the economy were not at that level of real output and interest rate initially.

The equilibrium level of output (and interest rate) is determined by the spending functions and money demand functions of the various economic agents (assuming an exogenous real money supply, other net financial assets, and government budget). Among the more critical determinants are:

- 1) autonomous consumer expenditures, investment expenditures, and government spending;

- 2) real money supply;
- 3) sensitivity of spending with respect to consumer and producer expectations;
- 4) income and interest rate elasticities of the various spending functions and money demand functions.

If the slope coefficients of the relevant demand and supply functions are constant and the value (real and nominal) of net financial assets is fixed, then the equilibrium value of real output depends on the level of real autonomous spending (including that which is due to exogenous government policies) and the level of real (exogenous) money supply:

$$\text{EQ. IV-1: } Y = a \cdot S + b \cdot (M^0/P^0),$$

where,  $y$ =real output;  
 $S$ =total aggregate autonomous spending (including government spending)  
 $M^0/P^0$ =exogenous real money supply;

It is important to note that an equi-proportional change in nominal money balances and prices, all else constant, leaves equilibrium real output unchanged.

Examination of Equation IV-1, or the IS-LM curves in Figure IV-1 reveals the comparative static properties of this simple macroeconomic scheme. If real autonomous spending increases and the IS curve shifts rightward (in Figure IV-1), then equilibrium aggregate real output increases; similarly, if there is an (exogenous) increase

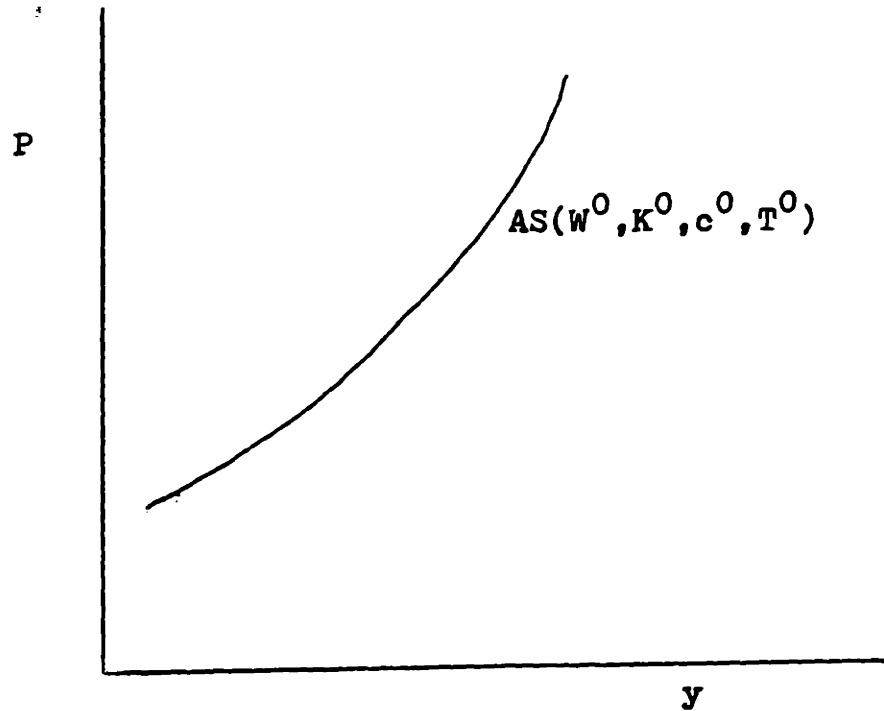
in the real money supply, then the LM curve in Figure IV-1 shifts downward and equilibrium real output increases (as Equation IV-1 also states).

In order to represent the influence of supply factors, the assumption of fixed average prices must be dropped. Figure IV-2 displays an aggregate supply curve. The curve is drawn for a fixed nominal wage rate, initial capital stock, other input prices, and technology. The positive slope represents the fact that, for fixed nominal wages (in particular) the higher are average prices, the more output will be supplied by firms. At the higher prices, real wages are lower. Thus, firms hire more labor and produce more output.

Similarly, the impact on aggregate demand of changing prices must be accounted for. With prices constant, equilibrium output and interest rates depend [assuming spending functions (private and public) and money demand functions are otherwise unchanged] on the level of autonomous spending and the level of real net financial assets. As prices rise, with (real) autonomous spending and the nominal value of net financial assets constant, the real value of net financial assets which are fixed in nominal value (such as money balances and government bonds) falls. Because the real value of private wealth falls, private spending declines in real value and the equilibrium level of output (in the goods markets) falls. Thus, there are two

FIGURE IV-2

## AGGREGATE SUPPLY CURVE



where:

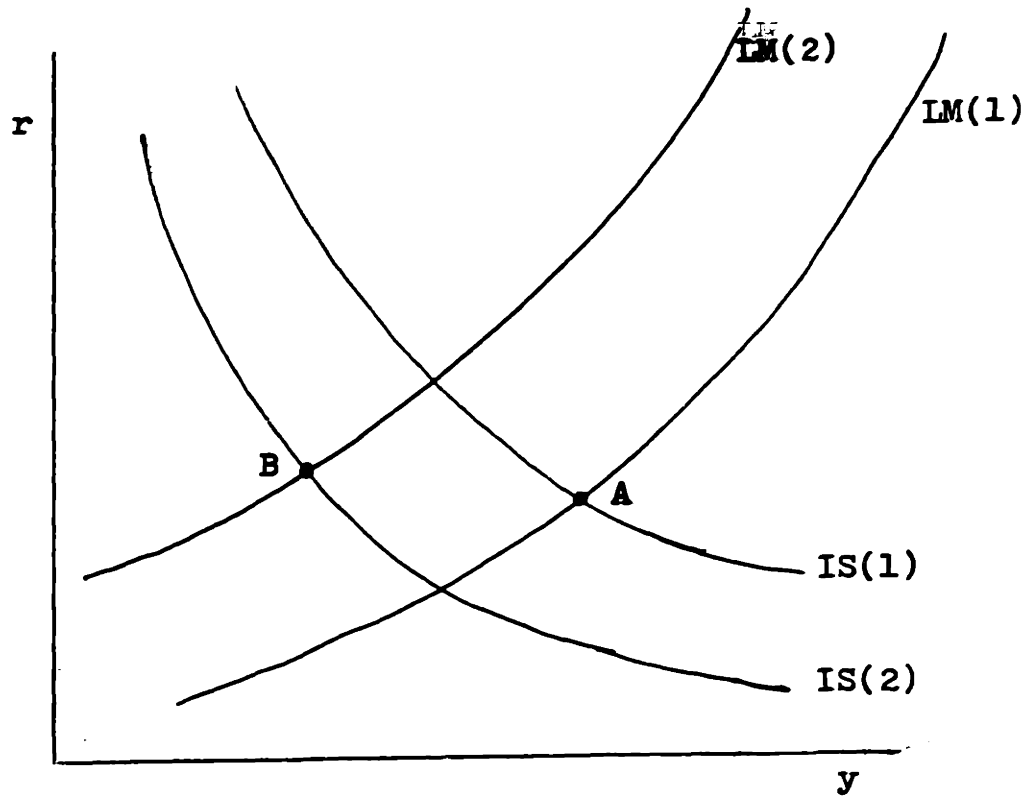
- P = average price level
- y = real output
- AS = aggregate supply curve
- $W^0$  = fixed nominal wage rate
- $K^0$  = fixed capital stock
- $c^0$  = fixed prices of productive inputs
- $T^0$  = fixed technology

major effects of the general rise in prices: the real value of the money supply falls (which shifts the LM curve) and the real value of spending falls because of the decline in the real value of net financial assets fixed in nominal value (which shifts the IS curve). Figure IV -3 traces the impact on the equilibrium levels of real output and interest rates of the (exogenous) increase in general prices. The inward shift of the IS curve, as real spending declines for each value of the interest rate, and the upward shift of the LM curve (reflecting the requirement that interest rates need be higher at every level of real income in order that the demand for real balances not exceed the diminished level of the real money supply) produce a lower equilibrium level of output (the movement from comparative static equilibrium at point A to the new equilibrium at point B). Note the inverse relationship between the level of prices and the new equilibrium level of real output.

Figure IV-4 graphs the aggregate demand curve--the inverse relationship between average prices and the equilibrium level of output (in the goods and money markets). Higher average prices: (1) decrease consumer spending due to the lower real value of money balances and other nominally fixed financial assets--the real wealth effect; and (2) create excess supply of real money balances at the original level of income, thereby driving the rate

FIGURE IV-3

IMPACT OF EXOGENOUS CHANGE IN GENERAL PRICES ON THE  
EQUILIBRIUM LEVEL OF REAL OUTPUT AND THE INTEREST RATE

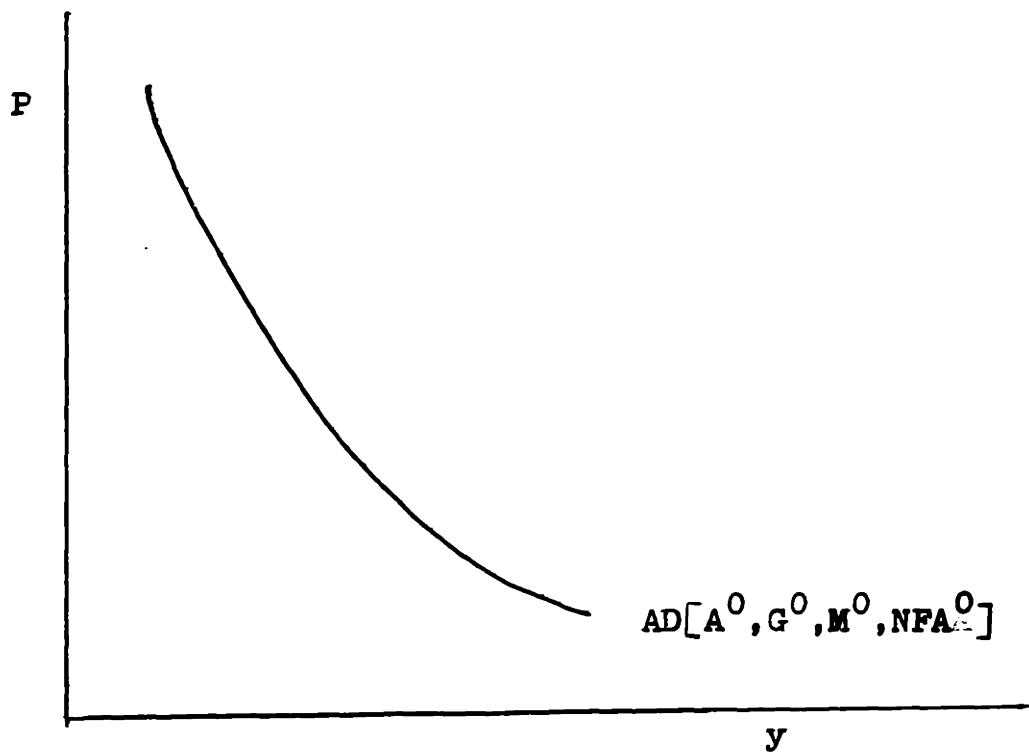


where:

- IS(1) : original IS schedule
- IS(2) : IS schedule after exogenous increase in price level
- LM(1) : original LM schedule
- LM(2) : LM schedule after exogenous increase in price level

FIGURE IV-4

## AGGREGATE DEMAND CURVE



where:

- $A^0$  : fixed level of autonomous spending
- $G^0$  : fixed level of government budget
- $M^0$  : fixed level of nominal money balances
- $NFA^0$  : fixed nominal total of net financial assets
- AD : aggregate demand schedule

of interest upward and consumption and investment spending downward. The response of equilibrium aggregate real output to changes in average prices will increase, (1) the more sensitive interest rates are to changes in the money supply; and (2) the more sensitive (elastic) spending (both consumer and investment) is to changes in interest rates.

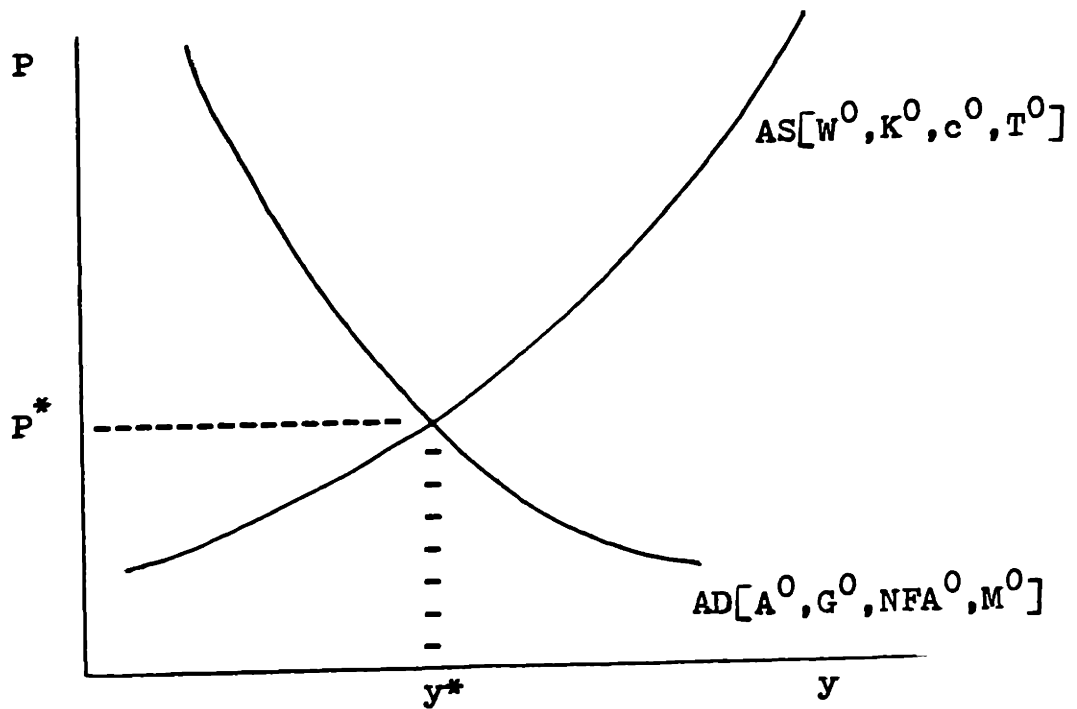
Finally, in Figure IV-5, the aggregate demand and supply schedules are combined to determine a stable equilibrium value for real output and for the average price level (assuming the given slopes for the two schedules).

If a stable Phillips Curve relationship is also assumed (which the evidence presented in Chapter II justifies for the historical period under investigation), then wages will fall when the equilibrium level of output in Figure IV-5 falls below the rate of output that insures full employment of the labor force. As wages fall, the aggregate supply schedule will shift downward--at each price level, real wages will be lower, employment thereby higher, and therefore equilibrium output will rise. Macroeconomic equilibrium will be characterized by rising output (and employment) and falling prices as long as excess supply in the labor market generates falling wages.



FIGURE IV-5

DETERMINATION OF THE EQUILIBRIUM LEVELS OF REAL OUTPUT AND THE AVERAGE PRICE LEVEL: AGGREGATE DEMAND AND AGGREGATE SUPPLY



where:

$y^*$  = equilibrium real output  
 $P^*$  = equilibrium average price level

Of course, the above outline of a macroeconomic system is highly simplified and ignores, for example, the role of price rigidities, expectations, and other mechanisms by which macroeconomic equilibrium can be affected.

However, the model has identified the importance of private spending, the government budget, and real money balances to the determination of real output and employment. Thus, to initiate an investigation of the impact of the codes, the model suggests that the effect of the codes on these three variables should be investigated. Since the NIRA codes did not independently alter government expenditures or taxes, this chapter will investigate the impact of the wage and price provisions on private spending and real money balances, and, derivatively, on macroeconomic equilibrium. By significantly raising wages and prices (as analyzed in Chapter II), the codes did diminish the real value of money balances (and other net financial assets of fixed nominal value), the effect of which is analyzed in Section III of this chapter. By redistributing income (as demonstrated in Chapter III), diminishing real wealth (due to the wage and price inflation), altering expectations, and raising the real wage rate (as discussed in Chapter III), the codes affected private autonomous spending and employment. These impacts will be analyzed in Sections IV-VII of this chapter.

## III

MONETARY EXPANSION, ECONOMIC  
RECOVERY, AND THE NRA CODES

Before estimating the effect of the codes on recovery, it is important to note the trend of the money supply during the NIRA period.

Between June, 1933 and June, 1934, the nominal money supply increased by approximately ten percent (regardless whether one considers M1 (currency held by public plus demand deposits at commercial banks or M2 (M1 plus time deposits at commercial banks)). Between June, 1933 and June, 1935, the nominal money supply (M1) increased by more than thirty-one percent (between the same two dates, M2 increased by twenty-six and one-half percent). Table IV-1 provides the growth of the money supply during 1933-1935.

The dramatic increases in the money supply after June, 1933 must be contrasted with the previous precipitous decreases in the nominal money supply that had characterized the economy during its downward spiral prior to the Spring of 1933. In just the six months between January and June of 1933, M1 decreased by almost 7% (approximately a fourteen percent annual rate of increase) and M2 decreased by approximately twelve percent (or slightly

TABLE IV-1

## NOMINAL MONEY SUPPLY: 1933-1935

(millions of current dollars)

Month	1933		1934		1935	
	M1	M2	M1	M2	M1	M2
JANUARY	20,627	34,154	19,720	30,954	23,648	36,035
FEBRUARY	19,982	32,607	20,298	31,614	24,353	36,765
MARCH	19,052	29,970	20,748	32,240	24,259	36,817
APRIL	19,039	29,747	20,880	32,571	24,586	37,377
MAY	19,449	30,100	20,997	32,798	24,774	37,581
JUNE	19,232	30,087	21,068	33,073	25,199	38,049
JULY	19,087	30,160	21,539	33,566	25,434	38,229
AUGUST	19,115	30,192	22,127	34,234	26,804	39,658
SEPTEMBER	19,171	30,261	22,024	34,097	26,381	39,352
OCTOBER	19,313	30,387	22,557	34,745	26,714	39,749
NOVEMBER	19,558	30,563	23,017	35,178	27,268	40,351
DECEMBER	19,759	30,807	22,774	35,061	27,032	40,338
YEARLY AVERAGE	19,449	30,753	21,479	33,344	25,538	38,364

M1: Currency held by public plus commercial bank demand deposits

M2: Currency held by public plus commercial bank demand and time deposits

Source: Friedman, M. & Schwartz, A. A Monetary History of the United States 1867-1960. Princeton: Princeton University Press, 1963. Table A-1.

less than twenty-four percent annual rate of decrease). These figures reinforce the accounts of many researchers who attribute the radical reversal of the trend in money to:

- 1) New Deal changes in the banking structure (federal deposit insurance, for example); and
- 2) explicit reversal of the monetary policy by the Federal Reserve Board.

Common to all factors which have been cited as responsible for the reversal of the money supply trend is their independence of the NIRA industrial code. Milton Friedman and Anna Schwartz have argued that, in contrast to the 1920's, the Federal Reserve System abandoned its attempts to sterilize gold movements or to smooth fluctuations in high-powered money. Because no systematic attempt to alter the quantity of high-powered money was made, the dominant influence on the money supply during the NIRA period became fortuitous inflows of gold. Friedman and Schwartz convincingly argue that the "accidental" gold inflow "occurred despite rather than because of the actions of unions, business organizations, and government in pushing up prices."<sup>9</sup>

The question remains: what effect did the NIRA codes have on the economic recovery from the Depression?

To answer this question, recall from Section II one of the primary characteristics of modern macroeconomic

models: the long-term characteristics of the model depend not on the nominal quantity of money; only the real money supply is critical.<sup>10</sup> In particular, an equi-proportional rise in money and prices leaves all other (real) variables unchanged. It is this consideration which helps identify the impact of the NIRA codes (and perhaps explains, in part, the otherwise anomalous sluggishness of the unemployment rate during the NIRA months, despite vigorous monetary expansion). First recall that the monetary expansion after June of 1933 was due, mainly, to gold inflows; for reasons previously discussed, the (approximately) fourteen percent average annual rate of increase in the money supply during the two-year NIRA period can be considered an exogenous shock-independent of the NIRA legislation itself. Second, the analysis in Chapter II indicated that the industrial codes contributed approximately fourteen percent to prices per year during the NIRA period. The codes exactly nullified the monetary expansion! Despite nominal expansion of the money supply, there was literally no expansion of the real money supply. Thus there was no stimulus to any real variables in the economic system.

In the absence of the codes, the monetary stimulus would have been expansionary; in the presence of the codes, the monetary stimulus was important.

Because the codes generated a fourteen percent annual rate of inflation during the NIRA, they imposed a fourteen percent reduction in the real money supply per year (relative

to what the level would have been in the absence of the codes). For the specific historical episode under investigation, the reduction in real balances of fourteen percent is equivalent to the nullification--in real terms--of the fourteen percent rate of increase in the nominal money supply after June of 1933. Note that in the absence of the codes, the monetary stimulus would have contributed to real output and employment; however, the combination of the monetary stimulus and the NIRA-induced inflation left real output virtually unchanged. Thus the contractionary impact of the codes can be measured, at least in part, by what contributions to real output and employment the monetary stimulus would have made in the absence of the codes.

In order to determine the effect of a fourteen percent annual increase in the nominal money supply on real GNP, it would be convenient to use money multipliers for real GNP (the change in real GNP per dollar change in the nominal money stock) from a suitable large-scale macroeconomic model of the 1930's U.S. economy. Though one such macroeconomic model exists--the Hickman-Coen Annual Growth Model of the U.S.--money multipliers for the 1930's have yet to be determined for this model. Existing information about the 1930's does not, unfortunately, permit a precise estimate of a monetary stimulus during the 1930's. Though the evidence that is available is inconclusive, conjectures can be made about the potential impact of the codes.

The maximum stimulus that a fourteen percent annual increase in the money supply could provide is fourteen percent annually. There are two necessary conditions for this maximum stimulus to be achieved, which can be seen by examining the following definition of  $V$ , the income velocity of money:

$$V \equiv \frac{P \cdot Y}{M}$$

where  $P \cdot Y$  = nominal income  
 $M$  = nominal money stock

or  $M \cdot V \equiv P \cdot Y$

The maximum real impact would have resulted from the monetary stimulus only if: (1) the income velocity of money remained constant; and (2) the entire change in nominal income was comprised of changes in real output; i.e., prices did not rise after the monetary stimulus.

Of course, neither of these two conditions would have strictly prevailed--perhaps not even approximately--during the 1930's. Thus fourteen percent is certainly an overestimate of the real impact of the monetary expansion.

To appreciate the possible extent of the overestimation, consider the post-war experience of the U.S. economy. If money multipliers for real GNP were approximately the same during the 1930's as they have been in the post-war economy (an assumption that will be discussed below), the potential stimulus from a fourteen percent annual increase in the nominal money stock can be readily estimated. Data reported in a comparative study of post-war macroeconomic models indicate that the average value of the money multipliers for



real GNP from the major post-war macroeconomic models are 2.6, 5.4, and 6.4 respectively, for the first three years following the monetary stimulus.<sup>11</sup>

From these estimates, a continuing 3.1 billion dollar (approximately fourteen percent) increase in the money supply, continuing for two years, would be expected to produce a 4.1 billion (1929) dollar increase in real output in the year following June, 1933.<sup>12</sup>

In the year following June, 1934, real output could be expected to have increased by 8.5 billion (1929) dollars due to the continuing money supply increase. For the entire NIRA period, monetary expansion itself would have contributed, in the absence of the codes, more than twelve billions of 1929 dollars. Thus monetary expansion, alone, would have increased real output by, on average, eight percent annually during the NIRA period. Though the estimate that real GNP would have increased eight percent (on average) because of the monetary expansion after June, 1933 is sizeable, it is well below the theoretically maximal impact.

And the consequence of the foregone expansion under the codes would have been continued misery for the unemployed. The unemployment rate was particularly persistent throughout the NIRA period. Hickman and Coen (the series to be used in the following discussion) estimate that unemployment, on an annual basis, was only three-tenths of one percent lower in 1935 than it was in 1933 (and actually increased by more than one percent in 1934).

This complete stagnation occurred despite the brisk recovery after June, 1935--after nullification of the industrial codes (the yearly averages confound the NIRA and non-NIRA periods in 1933 and 1935). The monthly unemployment measure used in this study (for the analysis in Chapter II) indicates similar stagnation. Table IV-2 provides the (monthly) unemployment series used in this study for the analysis in Chapter II. Table IV-3 compares the yearly averages for three different series on unemployment: Hickman-Coen, Stanley Lebergott, and the monthly series used in this study.

The Hickman-Coen model indicates that an eight percent increase in real GNP during the NIRA period would be associated with, at least, a three percent (on average) fall in the unemployment rate. In the absence of the codes, approximately 1.5 million individuals each year could have been spared the misery of unemployment (if the post-war money multipliers do not seriously overestimate the pre-war response to monetary stimuli). In other words, evidence based on post-war money multipliers indicates that the that the codes were responsible for vitiating a potential fifteen percent reduction in the number of individuals who were unemployed.<sup>13 14</sup>

Of course, these post-war money multipliers do not account for structural differences in the pre and post-war economy. Current evidence cannot yet definitively answer whether the monetary expansion during the 1930's would have been more or less powerful than the post-war experience.

TABLE IV-2

MONTHLY UNEMPLOYMENT RATE FOR 1933-1935  
(percent of civilian labor force)

MONTH	1933	1934	1935
JANUARY	22.9	19.5	16.7
FEBRUARY	22.7	17.7	15.5
MARCH	24.8	16.3	15.6
APRIL	24.0	15.7	15.3
MAY	21.7	15.9	15.7
JUNE	18.5	16.4	16.0
JULY	15.6	17.9	15.7
AUGUST	16.5	18.5	14.8
SEPTEMBER	17.1	19.5	14.9
OCTOBER	17.2	18.9	13.5
NOVEMBER	19.5	19.3	13.1
DECEMBER	19.4	18.3	12.9

Source: See Text (Chapter II).

TABLE IV-3

COMPARISON OF LEBERGOTT, HICKMAN-COEN, AND THIS  
STUDY'S YEARLY AVERAGES FOR UNEMPLOYMENT:  
1933 THRU 1935

(percent of civilian labor force)

YEAR	(1) LEBERGOTT ESTIMATE	(2) HICKMAN- COEN ESTIMATE	(3) THIS STUDY'S ESTIMATE
1922	6.7	7.3	7.12*
1923	2.4	4.5	2.06**
1931	16.3	13.0	16.4
1932	24.1	18.8	22.4
1933	25.2	19.8	20.0
1934	22.0	21.3	17.8
1935	20.3	19.5	15.0

\* For last six months of year.

\*\* For first five months of year.

Source:

Column (1): Lebergott, S. Manpower in Economic Growth: The American Record Since 1800. New York: McGraw-Hill, 1964. Table A-3.

Column (2): Hickman, B. & Coen, R. An Annual Growth Model of the U.S. Economy. Amsterdam: North-Holland, 1976, p. 239.

Column (3): See Text (Chapter II).

It is quite possible that a monetary stimulus would not have raised prices as much during 1933-1935 as it has in the post-war period (the source of the money multiplier used above). After all, the NIRA codes were imposed, in part, to halt what was perceived as a persistent downward spiral of prices. Thus, for given increases in nominal income, real output might be expected to have risen more, on average, in the aftermath of the Great Depression than in the post-war period.

It is to be expected that fiscal and monetary stimuli should be most effective--in real terms--during this period of massive underutilization of economic resources. When economic activity is severely depressed, the value of the real output term in equation #10 in Chapter II would be low. Friedman's formulation would therefore suggest that any change in nominal income that was induced by monetary expansion during this period would have been reflected relatively more in output increases than in price increases.<sup>15</sup> When the economy is suffering excessive underutilization of productive capacity, as was true during 1930-1935, the response of real output to, for example, a spending stimulus should be strong.

This theoretical presumption is confirmed by the simulations of the Hickman-Coen macroeconomic model for the U.S. economy. The Hickman-Coen estimates indicate that, for the years immediately following a fiscal stimulus, the

government spending multipliers for real GNP (i.e., the change, relative to a control solution, of real GNP per dollar change in nominal spending) during the NIRA period were considerably larger than the respective multipliers for other pre-war years.

In fact, Hickman and Coen find that the spending multipliers are higher, on average, during the pre-war period (not just the Depression years) than during the post-war years. Hickman and Coen attribute the differences to, in part, well-recognized structural changes in the economy. They emphasize the development of built-in-stabilizers in the United States economy since the pre-war period such as the larger federal tax base, the unemployment insurance system, changes in import and export propensities, and the smaller response of business fixed investment and state and local government expenditures to changes in GNP.<sup>16</sup>

For the above reasons, it would seem that, compared to the post-war period, given increases in nominal income during the NIRA period would be characterized by relatively larger real output changes. However, even if this statement were true, it would not necessarily follow that real output would rise relatively more during the pre-war period in response to a monetary stimulus. For example, changes in velocity during the NIRA period might have vitiated changes in the money stock, leaving nominal income relatively immune to monetary stimuli. However, the bulk of previous research

does not indicate that velocity behaved significantly different in the pre and post-war period. In a study conducted for specific years during the 1930's, Gandolfi concluded that the elasticity of the demand for money did not increase substantially during the Depression years. In fact, Gandolfi found that the elasticity of demand for money actually declined in 1933. Nor did the studies of Teigen, Brunner and Meltzer, or Laidler find any tendency for the interest elasticity of the demand for money to be significantly altered during the 1930's. And, after reviewing all of the major studies of the demand for money, Laidler concluded that "there appears to be little evidence" that the liquidity trap hypothesis is true.<sup>17</sup>

If, for the reasons cited above, (1) velocity did not negate monetary stimuli more in the pre than in the post-war period; and (2) increases in nominal income were likely to produce larger changes in real output in the pre than in the post-war economy, then the money multipliers from the post-war macroeconomic models should serve as a reasonable, albeit conservative, estimate of the pre-war money multipliers. Thus, the post-war-based estimate that the codes nullified a potential eight percent average annual increase in real GNP would be credible.

Despite the above arguments, it has not been proved that the money multipliers during the 1930's were at least as large as those for the post-war period. Hence, the eight

percent estimate, derived above for the real output loss due to the codes, cannot be definitely interpreted as an underestimate. Evidence has not been presented which proves that spending would have responded to whatever fall in interest rates would have accompanied monetary expansion (even assuming Gandolfi, et al. are correct that the money demand function was unchanged in the pre-war period). Existing macroeconomic models of the 1930's U.S. economy are either too primitive (for example, Klein-Goldberger) or insufficiently tested (for example, Hickman-Coen) to reveal the true response of the pre-war economy to monetary expansion. Klein and Goldberger, in an early macroeconomic model of the 1929-1952 economy, conclude that "In using our highly aggregative measure of investment, we find no reasonable empirical results for the effect of interest."<sup>18</sup> In the Hickman-Coen model, interest rates do enter the equations for investment in automobiles and in housing starts, but market rates "have no direct influence on business fixed investment in our model."<sup>19</sup> Personal consumption expenditures are similarly unaffected by market interest rates. Examination of these individual functions of the Hickman-Coen model does not reveal any obvious mechanism by which monetary expansion would have had a powerful impact during the 1930's. Nevertheless, the interest elasticities of most of the major spending functions (as well as the interest elasticity of the demand for money) in the Hickman-Coen model are not significantly different in the pre and post-war



periods; there is, therefore, no specific indication that money multipliers would be lower in the pre-war period (and recall, the Hickman-Coen spending multipliers are higher in the 1930's, which would produce, all else the same, a larger response to monetary expansion).

Nor could these macroeconomic models of the 1930's be expected to capture the entire impact of monetary changes. For example, the models fail to incorporate any wealth effects in the spending functions by which monetary policy could be expected to affect macroeconomic variables.

In the absence of definitive empirical evidence, the potential response of the 1930's economy to the monetary expansion after June, 1933 remains uncertain. The true response might have ranged anywhere between the minimal (zero) and maximal (fourteen percent) potential change in real output. Evidence based on post-war experience suggests that the real impact would lie in between the two extremes (eight percent increase in real output), but the appropriateness of this estimate is based on conjecture.

Even though existing macroeconomic models cannot pinpoint the overall impact of monetary expansion during the 1930's, some of the partial mechanisms by which money affected real output and unemployment can be identified and quantified. In the next several sections, the impact of the NIRA-induced diminution in real wealth, redistribution of income, and rise

in relative wages will be assessed. Though no estimate of the entire affect of the codes is possible from the separate examination of these partial mechanisms, the anlaysis does provide an indication of the possible magnitudes involved.

## IV

## REAL WEALTH EFFECT OF THE NRA CODES

The contractionary effects of the NIRA, which were discussed in Section III, were derived from the post-war macroeconomic models. These models, in general, explicitly capture the extent to which lower real money balances (due to the NIRA-induced inflation) cause interest rates to rise, and thereby cause (especially) investment and consumer durable spending to fall. However, most of these models (for example, the Hickman-Coen specification) exclude any direct role for net financial assets of fixed nominal value in determining consumer expenditures. Thus the models do not systematically estimate the extent to which the diminution in real wealth, due to the NIRA-induced inflation, reduced consumer spending. In this section, econometric evidence from other studies on consumption during the pre-war period will be used to estimate the effect on consumption of the NIRA-induced diminution of the real value of net financial assets.

Unfortunately, the total contractionary impact of the NIRA codes cannot be derived by simply adding the real wealth effects, to be discussed below, to the results, derived in Section III. Just because the macroeconomic models may not explicitly incorporate wealth effects does

not necessarily imply that the multiplier estimates of the model do not capture at least part of the wealth effects that do characterize the economic system. After all, the omission of wealth from the consumption function represents a specification error, which, in general, biases the estimates of the other parameters of the model. Part of the impact of real wealth on spending might already be included in these biased estimates. Thus, adding the real wealth effects, analyzed below, to the results of Section III might involve some double-counting of the total impact of the NIRA codes on the economy.

The extent of the possible double-counting cannot be determined since the extent to which the post-war multipliers happen to (implicitly) capture wealth effects cannot be accurately quantified (without simulation experiments). The multipliers of a non-linear multi-equation system depend not only on the parameters of the individual equations, but also on the complicated interactions between the variables and the dynamic properties of the models.

This section will provide an estimate of the independent effect on consumption due to the diminution of the real value of net financial assets (which was caused by the NIRA-induced rise in prices). Though this effect cannot be added to the spending reductions already estimated in Section III, the analysis does provide suggestive evidence

according to the following choices:

1) whether to use undeflated (nominal) variables, real variables, or variables deflated by population, labor income, or disposable income;

2) whether to include labor income or disposable income as independent variables;

3) whether to include non-monetary and net financial assets as separate wealth variables in order to allow for different marginal impacts on consumption;

4) whether the regressions should include variables in first difference form or what lag structure should be imposed on the explanatory variables.

Table IV-4 presents several major consumption studies, all of which are estimated for periods which include the 1930's. For each study, the table provides the implicit marginal propensity to consume out of wealth and the respective (short-run) elasticity of real consumption with respect to changes of the price level:

$$\text{EQ. III-3: } \epsilon_{C/P, P} = \frac{-z(NFW/P)}{(C/P)}$$

$$\text{where, } C = a + z(NFW) = \sum_i b_i X_i$$

C = aggregate consumption in year t;  
 NFW = total net financial assets of  
 fixed money value;

TABLE IV-4

ESTIMATES OF THE ELASTICITY OF REAL CONSUMPTION WITH RESPECT TO CHANGES IN THE AVERAGE PRICE LEVEL

Researcher	Period	Dependent Variable	Independent Variables	Wealth Variable	z	$\epsilon_{C/P,P}$
1 Christ	1921-47	per capita real consumption	current and lagged real disposable income	real money (M1) balances	0.21	0.14
2 Klein, Goldberger	1929-52	real consumer expenditures	real disposable wage, non-wage non-farm, and farm income; lagged real consumer expenditures; population	non-lagged deflated, year-end liquid assets held by households	0.07	0.044
3 Ando, Modigliani	1929-40 1947-59	nominal consumption	current non-property income, no constant term	nominal net worth; dummy wealth term (zero for 1929-40)	0.058	0.085
4 Same	same	same	includes constant term	same	0.047	0.069
5 Temin	1919-41	consumer spending	current income	Temin's net wealth of households	0.017	0.024
6 Temin	same	same	same	Ando-Brown's net wealth of hsehold	0.015	0.022
7 Temin	same	non-durable consumption	same	Temin's net wealth of households	0.023	0.034
8 Temin	same	same	same	Ando-Brown net wealth of hseholds	0.021	0.031

Definitions of z,  $\epsilon_{C/P,P}$ ; see text.

Source:

- Column 6, Row 1: Patinkin, D. Money, Interest, and Prices (New York: Harper & Row, 1965), pp. 656-57
- Column 6, Row 2: Klein, L. & Goldberger, A. An Econometric Model of the United States, 1929-1952 (Amsterdam: North-Holland, 1955), p. 90.
- Column 6, Row 3-4: Ando, A. & Modigliani, F., "The 'Life Cycle' Hypothesis of Saving: A Correction," American Economic Review, March, 1964, 54, 111-113.
- Column 6, Rows 5-8: Temin, P. Did Monetary Forces Cause the Great Depression? (New York: W. W. Norton, 1976), p. 71.
- Column 7, Rows 1-2: Short-run elasticities, calculated from Patinkin, op. cit., pp. 656-657.
- Column 7, Rows 3-8: -(column 6) x (nominal net financial assets of fixed money value in 1934) / (nominal consumption in 1934)

$P$  = (consumer) price index;

$X_i$  = other variables;

$z, a, b_i$  = constants

and where:  $\left( \frac{C}{P}, P \right)$  = elasticity of real consumption with respect to the price level.

Most estimates of the marginal affect on consumption from changes in wealth have ranged between .04 and .08 (where consumption and wealth are measured in the same units). The associated values for the elasticity of real consumption with respect to the price level are between -0.05 and -0.1. (The only estimates which lie well outside of this range are those of Peter Temin, which refer to nominal consumer spending (or else nominal nondurable consumption) and not to aggregate consumption or real consumer spending as in the other studies.) Thus, the NIRA-induced price inflation of fourteen percent per year would result in an approximately 0.7 to 1.4 percent reduction in real consumption--or between an 0.89 to 1.8 billion (1958) dollar reduction in real consumption. This reduction corresponds to a 0.41 to 0.82 billion dollar decrease in current dollars (or between 0.58 to 1.1 percent of real GNP in 1934).

Of course, the four to eight hundred million dollar reduction in consumption would induce an even

larger decrease in output and employment via the multiplier effect; in fact, these consumption declines act in an analogous fashion to the hypothetical exogenous shocks in government expenditures. Table IV-5 provides adjusted estimates of the government expenditure multipliers for nominal GNP, real GNP, and the unemployment rate from the Hickman-Coen model. These government expenditure multipliers estimate, respectively, the change in real GNP, nominal GNP, and the unemployment rate per dollar change in federal spending. The reported Hickman-Coen multipliers were adjusted because the Hickman-Coen simulations were conducted for exogenous changes that begin in 1926 while this study is interested in shocks initiated in 1933 (and continuing until 1935).<sup>21</sup>

The real balance effect of a .4 to .8 billion dollar decrease in nominal consumption would be expected to induce a 2.2 to 4.4 billion dollar decline in nominal GNP during 1933-1934 (based on the estimates in Table IV-5) and a 3.3 to 6.6 billion dollar decline in nominal GNP during 1934-1935. These figures represent an approximate (average) 5.5 percent to 11 percent decline in GNP during the NIRA period. In real terms, GNP would have declined by an average of four to eight percent during the NIRA period (5.4 to 10.7 billion (1958) dollar decline in real GNP during 1933-1934 and a 6.3 to 12.5 billion (1958)



TABLE IV-5

GOVERNMENT EXPENDITURE MULTIPLIERS FOR REAL GNP,  
NOMINAL GNP, AND THE UNEMPLOYMENT RATE: 1933-1935

GOVERNMENT EXPENDITURE MULTIPLIERS FOR:	1933	1934	1935
Real GNP (1958 dollars)	13.0	15.2	17.8
Nominal GNP	5.3	7.9	10.4
Unemployment Rate (percent of civilian labor force)	- 3.04	- 4.52	- 5.46

Definition of Multipliers: See Text.

Source:

- Row #1: 2.4 times the first three entries of column #3, Table 9.3 from Hickman, B. & Coen, R. An Annual Growth Model of the U.S. Economy. Amsterdam: North-Holland, 1976, p. 188.
- Row #2: 1.4 times the first three entries of column #1, Table 9.3 from Hickman & Coen, op. cit., p. 188.
- Row #3: 3.9 times the first three entries of column #7, Table 9.3 from Hickman & Coen, op. cit., p. 188.

dollar decline during 1934-1935. Finally, the Hickman-Coen model implies that a reduction of consumption of 0.4 to 0.8 billion dollars in 1933 and 1934 would produce a 1.3 to 2.5 percent increase in the unemployment rate (from the estimates of the unemployment rate multiplier provided in Table IV-5) during 1933-1934 and a 1.9 to 3.7 percent increase in unemployment during 1934-1935. Thus, the real balance effect, alone, would have increased unemployment by an average of 1.6 to 2.2 percent during the NIRA period-- and thereby added another 0.83 to 1.1 million persons to the unemployment rolls.

## RELATIVE WAGES, UNEMPLOYMENT, AND THE NRA CODES

In the previous sections, the direct impact of the NIRA-induced inflation on output and, thereby indirectly, employment has been estimated. Of course, any exogenous change in the relative price of labor--the wage rate deflated by an appropriate index of prices--will promote the direct substitution away from the employment of labor.

The manner in which a legally-mandated rise in the relative wage rate will influence the level of employment depends critically on the extent of coverage of the legislation and the institutional structure of the labor market.

If there had been significant sectors of the economy not covered by either the President's Re-employment Agreement or the National Industrial Recovery Act codes, then the net impact on the economy-wide average wage and unemployment would be ambiguous. Individuals released from the employment in the NIRA sectors might have been absorbed--at a lower wage--in the exempt industries. The rise in wages in the coded industries might have been offset by these wage reductions in the exempt

sectors.

Where a significant number of sectors are exempt from legally-mandated wage increases, the net effect on average wages and employment throughout the economy depends on a number of factors:

1) the relative demand elasticities for labor; the elasticity of demand for labor in the NIRA sectors would determine the number of individuals who would be newly unemployed by the legislation and therefore, the number of potential entrants into the exempt sectors;

2) the elasticity of supply of labor; the elasticity of labor supply, as a measure of the number of individuals who would exit the labor market as wages fall in the exempt sectors, will determine the extent to which wages will fall to equilibrate the labor market in the exempt sectors. The more elastic is the supply of labor, the higher average wages will rise (since wages will no longer fall in the exempt sector as much as they originally rose in the covered sectors); if the supply of labor is zero, then average wages will remain exempt sectors by as much as they rise in the NIRA sectors);

3) the factor ratios of the covered and exempt sectors; the more labor intensive the NIRA sectors, the more downward pressure is exerted on exempt wages from the exit of those unemployed in the covered sectors.<sup>22</sup>

Theorists of modern labor markets have suggested that some unemployment results because individuals voluntarily forego employment in sectors uncovered by minimum wage laws in order to secure employment, perhaps at a later time, in the covered sector, which offers a higher expected wage (despite the increased probability of unemployment). If these theories are true, then the amount of unemployment generated by the NIRA legislation would depend, among other variables, on the percentage of sectors covered by the industrial codes, turnover rates in the covered sectors, the extent to which wages rose in the covered sector, and the elasticity of demand in the covered sector.<sup>23</sup>

However, for the specific historical experience under investigation, many of the above considerations are extraneous. First, the codes covered almost all of the private, nonagricultural economy as previously discussed in Chapter I. The number of excluded sectors were few. And those sectors not subject to NIRA codes were either:

- 1) covered by some other legislation with similar wage and price controls (such as agriculture workers under the Agriculture Adjustment Act);

- 2) a sector not large enough to offer a significant outlet for the millions of otherwise unemployed individuals (such as the domestic service sector);

3) not subject to market forces in absorbing additional unemployed or in wage determination (government sector).

In general, with approximately one-quarter of the labor force unemployed in the Spring of 1933 and most of the private sector (including all of manufacturing) covered by the NIRA codes, the exempt industries did not provide a quantitatively important outlet for those who were unemployed in the NIRA sectors. Nor, with the level of deprivation that existed in the Spring of 1933, would it seem that the unemployed were foregoing exempt industry jobs in order to search for employment at a higher wage at a later time in the NIRA sectors. Rather, the unemployment seems to have been a generalized economy-wide phenomenon--not sector specific--and generated by the unavailability of any jobs at the prevailing market wages, the downward flexibility of which was eliminated by imposition of the economy-wide NIRA codes.

Having made the argument that the NIRA codes are best considered to have been complete in coverage, the effect of the codes would be unambiguous only if the elasticity of supply of labor were zero. If so, then, with competitive labor markets, the higher relative price of labor due to the codes would have reduced the quantity demand of labor. Unemployment would have assuredly

increased. With non-competitive labor markets, there remains the theoretical possibility that unemployment could have actually declined.

Assuming complete coverage by the codes, the Hickman-Coen model can be used to estimate the unemployment effects of the NIRA-induced relative wage change. The Hickman-Coen labor demand equation, which, besides other independent variables, provides the independent impact on the log of man-hours of a change in the wage rate relative to the implicit relative price of capital goods.<sup>24</sup> This implicit rental price for capital measures "the price per annum for the services of a unit of business fixed capital" and is a function of the price of new capital goods, depreciation rate, various tax rates, and other appropriate variables.<sup>25</sup> If it is assumed that the NIRA affected the rental price of capital no more than prices in general, then the analysis in Chapter II implies that the codes were responsible for a twenty-six percent increase in nominal wages and a fourteen percent hike in the rental price of capital. Consequently, the price of capital relative to labor was reduced by over nine percent. The Hickman-Coen labor demand equation predicts that a price change of labor relative to capital of this magnitude would reduce the demand for man-hours of labor by

1.7 percent. A 1.7% increase in the unemployment rate would follow, at the original level of average hours worked per employee and the original labor force participation rate. (Of course, average hours worked per week per employee were altered by the NIRA by explicit regulation, but this impact was independent of the discussion in this section.)



## VI

REDISTRIBUTION OF INCOME, ECONOMIC  
RECOVERY, AND THE NRA CODES

The Congressional and Administration advocates of the NIRA placed great emphasis on the economic gains that would result from a redistribution of income toward labor and away from property owners. Recall, that the provisions of Title I were designed to raise wages, via the industrial codes or the President's Re-employment Agreement, before prices rose. It was argued that a redistribution based on rising real wages would increase total consumer spending. This theory was so widely accepted that recovery through redistribution toward labor was generally referred to as the "purchasing power theory of recovery," as if redistribution was the obvious functional equivalent of increasing "purchase power" or consumer spending.<sup>26</sup>

If the redistribution of income toward labor had stimulated total spending, then it would have had to be true that the marginal propensities to consume out of wage income were significantly larger than the marginal propensity to consume out of nonwage (nonfarm) income.

Because the post-war macroeconomic models do not, in general explicitly allow the marginal propensity to consume to differ among the various groups of income-earners, econometric evidence from other studies of consumption

during the prewar period must be analyzed if the effect of redistribution on consumption is to be determined.

To examine this possibility, consider the Klein-Goldberger estimate of an annual consumption function for 1929-1952 (excluding 1942-1945):<sup>27</sup>

EQ. IV-4:

$$C_t = 22.3 + 0.55RDWI_t + 0.41RDPI_t + 0.34RDFI_t \\ + 0.26C_{t-1} + 0.072L_{t-1} + 0.26N_t$$

where,  $C_t$  = real disposable consumer expenditures in year  $t$  (1939 dollars);

$RDWI_t$  = real disposable wage income in year  $t$  (1939 dollars);

$RDPI_t$  = real disposable nonwage nonfarm income in year  $t$  (1939 dollars);

$RDFI_t$  = real disposable farm income in year  $t$  (1939 dollars);

$C_{t-1}$  = real disposable consumer expenditures in year  $t-1$  (1939 dollars);

$L_{t-1}$  = deflated end-of-year liquid assets held by persons, for year  $t-1$  (1939 dollars);

$N_t$  = population in year  $t$ .

Note that the equation allows for separate marginal propensities to consume out of real disposable wage income, real disposable nonwage nonfarm income, and real disposable farm income. In the short run, these marginal propensities are 0.55, 0.41, and 0.34 respectively.

The estimates in Chapter II indicate that the codes of fair competition were responsible for an increase in real wages of 10.5 percent annually during the NIRA

period. Even if the NIRA left total man-hours of employment unchanged (a proposition which is directly contradicted in this chapter), then, at most, real disposable labor income would have risen by 10.5 percent. Of course, if the industrial codes had caused output and employment to fall, then real disposable labor income would have risen by considerably less than 10.5 percent annually.

From the data provided in Table IV-6, a 10.5 percent increase in real disposable income in 1933 would have amounted to 3.52 billion (1939) dollar increase. Since the short-run marginal propensity to consume out of real disposable labor income exceeds the marginal propensity to consume out of real disposable nonwage nonfarm income, a redistribution toward labor will increase total consumer spending. From Equation IV-4, a redistribution of 3.5 billion (1939) dollars to labor from nonwage nonfarm income would produce an increase of approximately 0.5 billion (1939) dollars in both 1933 and 1934 (which represents a one percent increase or approximately 0.5 billion current dollar increase). The multipliers provided in Table IV-5 indicate that a 0.5 billion (current) dollar increase in spending would result in a 2.7 billion dollar increase nominal GNP between 1933 and 1934 and a 4.0 billion dollar increase in nominal GNP between 1934 and 1935. These figures represent an approximate 5.5

TABLE IV-6

REAL DISPOSABLE WAGE, NONWAGE NONFARM,  
AND FARM INCOME: 1929-1939

(billions of 1939 dollars)

YEAR	REAL DISPOSABLE WAGE INCOME	REAL DISPOSABLE NONWAGE NONFARM INCOME	REAL DISPOSABLE FARM INCOME
1929	42.3	20.3	4.6
1930	40.4	18.8	3.3
1931	39.2	17.4	2.6
1932	34.1	14.8	1.7
1933	33.6	13.4	2.4
1934	36.9	13.9	2.4
1935	39.3	14.7	5.0
1936	45.5	17.2	3.9
1937	46.1	17.2	5.5
1938	44.2	15.9	4.4
1939	47.7	17.6	4.5

Source: Klein, L & Goldberger, A. An Econometric Model of the United States 1929-1952 (Amsterdam: North Holland, 1955), pp. 131-133.

percent average increase in nominal GNP during the NIRA period just due to the redistribution of income toward labor. In real terms, GNP would have increased by an average of seven billion (1958) dollars, or almost five percent annually during the NIRA period. The redistribution would, thereby, have lowered the unemployment rate by almost two percent during the NIRA period.

Thus, the maximum stimulus to recovery from the redistribution of income toward labor would just (approximately) offset the recessionary impact of the real wealth effect (due to the NIRA-induced inflation). However, this chapter has documented the many mechanisms by which the NIRA lowered real output and employment; the increase in labor income due to the codes would, therefore, have been considerably less than the 10.5 percent provisionally assumed throughout this section. Therefore, redistribution would not even have offset the real wealth effect, let alone the deleterious impacts of the codes due to all of the other mechanisms outlined in this chapter.

One last caveat: as discussed in Section IV (real wealth effect), the total impact of the codes on consumption cannot be determined by simply adding up the effects estimated separately in Sections III, IV, and VI. Just because many of the post-war macroeconomic models omit different marginal propensities to consume for various groups of

income-earners does not necessarily imply that all of the effects on consumption due to changes in the distribution of income are absent from the multiplier estimates for the model. The omission of separate marginal propensities to consume represents a specification error, which might produce (partially) compensating errors in the estimates of the other parameters of the system. This section has produced an estimate of the independent effect on consumption due to the redistribution of labor that was caused by the NIRA codes. Though this effect cannot be added to the spending changes previously estimated, the analysis does suggest the potential importance of this one channel by which the NIRA codes affected the economy.

## BUSINESS EXPECTATIONS AND THE NRA CODES

There are, of course, other mechanisms by which the NIRA might have significantly affected the course of economic recovery during the period immediately following the trough of the Great Depression. One that was explicitly mentioned by the architects of the legislation was "expectations."<sup>28</sup>

The codes were designed to assure business a sufficiently high price in order to protect profits and inspire firms to increase production rates and investment. More specifically, they were designed to rescue an orderly economic environment out of the chaotic plummet of prices and production that characterized the pre-Roosevelt economy. By legislating minimum prices--which were undoubtedly to become effective price floors--the NIRA architects argued that the "psychology" of deflation-spiral could be reversed, the economy stabilized, and the foundation for later recovery firmly established. Thus, both contemporary observers and subsequent historians have emphasized the success of the industrial codes in providing a "holding action" and eliminating the self-perpetuating recession

and deflation. For example, note the quotations of Hawley and Schlesinger that were cited in Section I of this chapter.

As with most arguments about expectations in economics, the extent to which there was a link between code adoption and increasingly optimistic expectations by business firms, and therefore, to increased investment and production, is most difficult to determine. Because expectations are never directly observed, hypotheses about their fluctuations and consequences often remain unsubstantiated conjecture. In fact, determining the effect of the proposed (and then legislated) codes on business expectations is even more difficult than expectations arguments in other historical episodes. For example, Peter Temin, in his recent study of the causes of the Great Depression, successfully appealed, in part, to business journals and the like to ascertain the state of business confidence in the crucial years of the early 1930's.<sup>29</sup> Temin was able to do so because the contemporary observers were not required to isolate particular "causes" of their expectations; Temin needed only to appraise public statements on overall business confidence.

For the problem under investigation in this chapter, it is not sufficient to ascertain the state of expectations prior to, during, or following the NIRA



legislation. Rather, the change in expectations due to one particular section (Title I) of one of many new legislative measures would be required. In a period of the most dramatic legislative activity in United States history, such a determination would seem to be impossible. Few contemporary observers would even claim to react to only one of the myriad of legislative acts passed in the initial months of the Roosevelt Administration. Even if expectations could be measured and even if their course over time could be determined, to what extent their movement could be attributed to just Title I would remain unresolved.

It should be noted that other New Deal legislation (in 1933-1935) did not directly intervene in the non-agriculture wage-price mechanism of the economy; thus, reasonable inferences with respect to the impact of the NIRA on income distribution and recovery were possible in this study. No such reasonable inference is immediately possible about the NIRA's effect on expectations since all of the New Deal legislation could be argued to have influenced expectations in complicated and unobserved ways.

In general, the only individuals who even isolated the industrial codes in discussions of business expectations, were interested parties to the legislation (Roosevelt advisors, NRA administrators, and industry and labor

representatives before the National Recovery Administration) whose testimony is best considered more as a polemic than as an accurate guide of how the tenor of general business confidence changed with the passage of the NIRA.

Some indirect evidence is possible, however, which is suggestive, if not conclusive. Recall that Roosevelt was inaugurated on March 4, 1933. By May 17 the NIRA legislation was already drafted and presented to Congress. The proposed legislation was the result of numerous negotiations between Congressmen (especially Senator Robert F. Wagner), Roosevelt advisors (such as Rexford Tugwell, Lewis Douglas, Donald Richberg, Raymond Moley, and Hugh Johnson), Cabinet members (Frances Perkins), and business and labor representatives.<sup>30</sup> The final legislation was signed on June 16, 1933, slightly more than three months following Roosevelt's inauguration. If the prospect of the legislation was an economic stimulant, perhaps the economic data on monthly production levels would be revealing.

Table IV-7 provides the Federal Reserve System's index of industrial production for the months just preceding the inauguration and extending to the months just following code (and PRA) adoption. Note that between the time that the NIRA was proposed (May, 1933) and the adoption of the legislation (June, 1933), there was a spectacular

TABLE IV-7

TOTAL INDUSTRIAL PRODUCTION (INCLUDING UTILITIES):  
1933-1935

Index: 1947-1949 = 100; Seasonally Adjusted

MONTH	1933	1934	1935
JANUARY	30.8	38.3	44.3
FEBRUARY	30.7	40.1	45.1
MARCH	29.0	42.0	44.9
APRIL	31.0	42.2	44.0
MAY	36.2	42.7	44.0
JUNE	41.6	41.9	44.7
JULY	45.3	39.1	44.8
AUGUST	43.5	38.7	46.4
SEPTEMBER	41.2	37.2	47.7
OCTOBER	38.9	38.1	49.1
NOVEMBER	36.7	38.4	50.1
DECEMBER	37.0	41.0	50.8

Source: Board of Governors of the Federal Reserve System.  
Industrial Production 1959 Revision. Washington,  
D.C.: United States Government Printing Office,  
1960. Table S-149.

fifteen percent increase in the industrial production index. Industrial production continued to rise thru July--increasing by another nine percent.

Many observers, especially those who were contemporaries of the legislation, have argued that businesses increased production just prior to the NIRA's passage in order to simultaneously avoid the higher production costs (higher wages) but be able to build up inventories to take advantage of the higher prices that were expected to accompany adoption of the industrial codes:

. . . the certainty and imminence of impending cost and price increases under the NRA offered a well-nigh unprecedented incentive to speed up, to 'beat the gun', and industry responded with an acceleration in activity that perhaps has no parallel in the history of the country.<sup>31</sup>

To be sure, industrial production soon declined by eighteen percent between August and December, 1933. By the end of 1933, industrial production was no higher than it had been prior to the NIRA's passage. Contemporary observers are quick to attribute the subsequent economic recession in the Summer of 1933 to reversed expectations once the NIRA proved no panacea:

In the nature of the case of a boon of this character [in anticipation of NRA industrial codes] is not likely to last long. Much of the increased output goes into

stocking inventories in anticipation of forthcoming cost and price advances. There is of course a limit to the amount of inventory that can be piled up for this reason, whether by producers or by ultimate consumers. Moreover, the eventual realization of the expected advances removes the incentive for further accumulation and invites a return to more normal levels. Naturally, when the holders begin to liquidate their stocks, they are able to curtail or suspend their replacements for a while, with results the opposite of those which occurred during the period of accumulation.<sup>32</sup>

Kenneth Roose agrees. He attributes the ensuing stagnation not only to NIRA codes but to a host of other New Deal legislation that followed between 1933 and 1936 (including the National Labor Relations Act, Social Security Act, various tax measures, and establishment of numerous regulatory agencies).<sup>33</sup>

The evidence that most analysts cite, in attributing the rise and fall of production during 1933 and 1934 to the changing expectations that surrounded the proposal, adoption, and implementation of the NIRA codes, is the historically-peculiar sluggishness of private investment. In fact, net private investment never even turned positive until 1936. Throughout the 1930's, durable production suffered relative to nondurable production and services. However, no research has proven that it was the failure of the NIRA to provide prosperity, and not any number of

other factors (including other New Deal legislation), which contributed to the lack of business confidence. Nor, has any research, more importantly, satisfactorily distinguished the independent effect of the codes on confidence from their deleterious macroeconomic effects previously analyzed in this chapter. To what extent stagnation started in the late Summer of 1933 because of reversed expectations or to the macroeconomic effects of the code-induced inflation cannot be fully determined.

## VIII

## SUMMATION AND CONCLUSIONS

The NIRA-induced inflation was sufficient to vitiate whatever expansion would have resulted from the vigorous (though fortuitous) monetary expansion that began in June of 1933. Unfortunately, just how much real output and unemployment would have responded to the monetary stimulus in the absence of the codes cannot, as yet, be accurately determined. The average annual loss in real output was certainly between zero and fourteen percent. Conjectural evidence, based on the post-war experience of the U.S. economy, suggests that the codes eliminated a potential eight percent average annual increase in real output (and a fifteen percent reduction in the number of individuals who were unemployed during the NIRA period).

Other evidence established that the diminution of real wealth, alone, was responsible for a six to eleven percent reduction in annual GNP during the NIRA years. Also, the NIRA-induced relative wage increase added another two percent to the unemployment rolls.

As a partial offset, the redistribution of income toward labor would have increased consumer spending and, through the multiplier effect, output and employment. At the very most, this impact would have been of a magnitude

similar to just the real wealth effect alone (but opposite in direction). Much more likely, since the NIRA did reduce the level of employment in so many other ways, the redistribution was less consequential for recovery than even the real wealth effect.

What the chapter does not provide is a single estimate of the total NIRA impact on employment and output. After all, it cannot be assumed that the total effect is the simple sum of the previously discussed partial mechanisms, all of which are imbedded in a mutually determined and determining general equilibrium system. To determine the NIRA's total effect would require the simulation of a macroeconomic model which incorporated all of these partial mechanisms (which no existing macroeconomic model of the period can provide).

Furthermore, the chapter makes no claim to have analyzed every macroeconomic impact of the NIRA codes. For example, many issues have already been satisfactorily resolved by researchers who were contemporary to the NIRA (such as the National Recovery Administration's own staff). In particular, the implications of the work-spreading provisions on the average hours worked and the number of persons employed (though not on total man-hours of employment) has already been reviewed in Chapter I. Other macroeconomic issues cannot be successfully addressed without the



aid of a macroeconomic model specifically designed to incorporate the intricate types of legislative provisions and peculiarities of the 1930's economy. For example, the relationship between the provisions of the NIRA codes (and expectations that preceded and accompanied their implementation) and the level of investment spending (of various types) would require a sophisticated theory of investment in the 1930's U.S. economy.

## CHAPTER IV FOOTNOTES

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5. Schlesinger, Arthur M., Jr., The Coming of the New Deal, p. 172.
6. Ibid., p. 173.
7. Ibid., p. 174.
8. The following section is based on: Branson, William E., Macroeconomic Theory and Policy; Foley, Duncan and Sidrauski, Miguel, Monetary and Fiscal Policy in a Growing Economy; Dornbusch, Rudigar, Lecture Notes on Macroeconomics; Bailey, Martin J., National Income and the Price Level.
9. Friedman, Milton and Schwartz, Anna, A Monetary History of the United States, 1867-1960, p. 499. See pp. 499-534.
10. See, for example, Hickman, Bert G. and Coen, Robert M., op. cit., pp. 150, 176.
11. Fromm, Gary and Klein, Lawrence R. "The NBER/NSF Model Comparison Seminar: An Analysis of Results," in L Klein, L. R. and Burmeister, E., Econometric Model Performance, Table 9.
12. The 4.1 billion (1929) dollar estimate for the increase in real output in the year following June, 1933 was derived as follows: the 3.1 billion dollar increase in the money supply was multiplied by the first-year money multiplier (2.6); this product was then multiplied

by 0.506 in order to convert to 1929 dollars  
 $[4.1 = (3.1) \cdot (2.6) \cdot (0.506)]$ .

For the multiplier experiments conducted in this chapter, the money supply during the NIRA period is considered to have increased at a constant annual rate (the average of the actual changes) during the tow years. A constant rate, rather than the actual trend in the money supply, is used because the Hickman-Coen simulations were conducted only for the hypothetical situations where the exogenous variables changed by a constant amount each year. Estimates using the actual money supply figures did not change qualitative results.

13. See Hickman, Bert G. and Coen, Robert M., An Annual Growth Model of the U.S. Economy. From Table 9.3 (page 188), it can be determined that for the years 1933-1935, a one (1958) dollar increase in real GNP was associated with, on average, a 0.28% reduction in the unemployment rate.
14. It should be noted that the NIRA-induced rise in unemployment would reverberate through the economy and modify the original inflationary consequences of the industrial codes. Although the final (equilibrium) effects on output, employment, and prices cannot be exactly determined without the solution of the entire set of macroeconomic relationships, the estimates for the two-equation Phillips Curve system in Chapter II suggest that the feedback effect would not be severe. If unemployment were to rise by the amounts suggested in this section, the inflation rate would be altered, initially, by less than two percent annually from the value estimated in Chapter II. The estimates from Chapter II indicate that, for the unemployment rates experiences in the early 1930's, a one percent change in the unemployment rate would be accompanied by a one-third percent change in the inflation rate.
15. Friedman, Milton, "A Theoretical Framework for Monetary Analysis," Journal of Political Economy, pp. 223-29.
16. Hickman, Bert G. and Coen, Robert M., op. cit., p. 193.
17. Gandolfi, A. E., "Stability of the Demand for Money During the Great Contraction--1929-1933," Journal of Political Economy, pp. 969-83; Teigen, R., "Demand and Supply Functions for Money in the United States,"

- Econometrica, pp. 477-509; Brunner, K. and Meltzer, A., "Predicting Velocity: Implications for Theory and Policy," Journal of Finance, pp. 319-54; Laidler, David, "The Rate of Interest and the Demand for Money--Some Empirical Evidence," Journal of Political Economy, pp. 545-55; Laidler, David, The Demand for Money: Theories and Evidence, pp. 119-52.
18. Klein, L. R. and Goldberger, A. S., An Econometric Model of the United States 1929-1952, p. 67.
  19. Hickman, Bert G. and Coen, Robert M., op. cit., p. 106.
  20. Ando, Albert and Modigliani, Franco, "The 'Life Cycle' Hypothesis of Saving: Aggregate Implications and Tests," The American Economic Review, pp. 55-84; Arena, John J., "Capital Gains and the 'Life Cycle' Hypothesis of Saving," The American Economic Review, pp. 107-11; Evans, Michael K., "The Importance of Wealth in the Consumption Function," Journal of Political Economy, pp. 335-51; Evans, Michael K., Macroeconomic Activity: Theory, Forecasting, and Control, pp. 34-44, 59-69; Klein, L. R. and Goldberger, A. S., An Econometric Model of the United States, 1929-1952, pp. 4-10, 90; Modigliani, Franco, "The 'Life Cycle' Hypothesis of Saving Twenty Years Later," Proceedings of the AUTE Conference; Modigliani, Franco, "Monetary Policy and Consumption," in the Federal Reserve System of Boston, Consumer Spending and Monetary Policy: The Linkages, pp. 9-84; Patinkin, Don, Money, Interest, and Prices, 2d ed., pp. 651-64.
  21. The Hickman-Coen simulations (multiplier estimates) represent the macroeconomic effects that result from a sustained increase in government expenditures that is initiated in 1926 and is maintained unchanged through 1940. This study requires the estimate of the macroeconomic effects that result from a change in expenditures that is initiated in 1933 and continues for two years.

The Hickman-Coen estimates indicate that the government expenditure multipliers for real GNP and the unemployment rate were atypically high during 1930-1935, compared to other pre-war years. This result is not surprising. When the economy is suffering excessive "slack" or underutilization of productive capacity, as was true during 1930-1935, the response of real output to fiscal

stimulus should be strong (thus suggesting that the multipliers for real GNP and the unemployment rate would be particularly large).

The Hickman-Coen simulations indicate that the government expenditure multipliers for real GNP (for example) is, on average, 2.4 times larger during 1933-1935 than for 1926-1929. Hickman-Coen provide multiplier estimates for the first three years following an expenditure shock initiated in 1926. To derive the adjusted expenditure multipliers for real GNP, reported in Table IV-9, the Hickman-Coen estimates for the first three years are multiplied by 2.4. Similar adjustments were made for the expenditure multipliers for nominal GNP and the unemployment rate.

22. Welch, Finis, "Minimum Wage Legislation in the United States," Economic Inquiry, pp. 285-318.
23. Gramlich, Edward M., "Impact of Minimum Wages on Other Wages, Employment, and Family Incomes," Brookings Papers on Economic Activity, pp. 409-15; and Mincer, Jacob, "Unemployment Effects of Minimum Wages," Journal of Political Economy, pp. S87-S104.
24. Hickman, Bert G. and Coen, Robert M., op. cit., p. 63. The Hickman-Coen estimate for labor demand is as follows:

$$\ln ME - 1 ME_{-1} = 0.103 - 0.0343 \text{ DUMMY1} + 0.177 \ln (Q_4/W) \\ (0.556) \quad (.422) \quad (1.58) \\ -0.009 \text{ TIME3} \quad -0.011 \text{ TIME5} \\ (6.71) \quad (3.71) \\ +0.559 (\ln \text{ XNR} - \ln ME_{-1}) \\ (13.2)$$

$$\bar{R}^2 = 0.852, \quad \bar{S}_e = 0.0190, \quad \text{DW} = 2.28$$

where, ME = total man-hours, private sector, billions of hours;

W = money wage rate, private sector, before tax, dollars per hour;

DUMMY1 = zero for 1922-1948;  
= one for 1949-;

TIME3 = linear trend, 1924-1940,  
1924 = 1.0;

TIME5 = linear trend, 1949-on,  
1949 = 26.0;

$Q_4$  = implicit rental price of capital  
goods, decimal fraction;

XNR = gross private non-residential  
product, billions onf 1958 dollars;

and where, numbers in parentheses are standard  
t-ratios.

25. Hickman, Bert G. and Coen, Robert M., op. cit., pp. 105-06.
26. See Section II, Chapter I.
27. Klein, L. R. and Goldberger, A. S., An Econometric Model of the United States, 1929-1952, p. 90.
28. See Section II, Chapter I.
29. Temin, Peter, Did Monetary Forces Cause the Great Depression?, pp. 74-79.
30. Schlesinger, op. cit., pp. 87-98.
31. Lyon, Leverett S., et al., The National Recovery Administration: An Analysis and Appraisal, p. 797.
32. Ibid., pp. 797-98.
33. Roose, Kenneth D., The Economics of Recession and Revival, pp. 126-41, 209-33.

**CHAPTER V: CONCLUSION**

This study has analyzed the significant redistributive and macroeconomic impacts of the National Industrial Recovery Act during the years between 1933 and 1935. It has been demonstrated that the persistent wage and price inflation after June, 1933 can be attributed to the NIRA codes and not, as much previous analysis argued, to dysfunctional or aberrant labor markets. In the absence of the codes, the prevailing--and massive--unemployment would have caused a sizeable deflation.

This study also documents the significant distributional consequences of the codes: the average real hourly wages of labor were dramatically increased; the differentials in hourly and weekly wages between workers of different skills, sexes, and rates of pay were considerably diminished. The data on hourly and weekly earnings testify to the success of the NIRA in initiating a redistribution of income toward the relatively disadvantaged. However, the codification process is also shown to have favored the larger, well-organized, and more politically-powerful firms at the expense of smaller, unorganized



firms.

The overall macroeconomic impact of the codes has not been determined. The NIRA-induced increases in wages and prices were sufficient to vitiate the potential expansionary impact of the monetary stimulus after June, 1933. By diminishing the real money supply, reducing real wealth, and increasing real wages, the NIRA codes did contribute to unemployment (an impact which was only partially offset by the expansionary consequences of the redistribution of income to labor).

Despite these findings, this study does not, of course, determine the entire legacy of the NIRA.

First, this analysis of the redistributive and macroeconomic impacts has been restricted to the two-year NIRA period. The extent to which the economic impacts continued beyond the Schechter Decision (of the Supreme Court) remains undetermined. How much of the current influence wielded by large corporations and labor unions is the legacy of the NRA's encouragement of unionization, industrial self-government, and monopolistic practice? How long did the cartel agreements, protected by the codes, persist after Schechter? (The evidence presented at the end of Chapter II suggests that code nullification did not vitiate, at least immediately, industrial price arrangements.) And was the competitive position of small,

unorganized firms irreversibly harmed by the code authorities?

Second, the social reforms (such as the abolition of child labor) and institutional reforms (such as the mechanisms for collective bargaining and government regulation) which were initiated under the codes have been ignored. How much of the post-war impetus to economic planning and regulation by the federal government can be traced back to the precedents established under the codes?

Finally, this analysis did not examine the effect of the codes on subsequent legislation. Economy-wide minimum wages, minimum standards for working conditions, price controls, consumer protection, limitations on trade practices, and special provisions for minorities have all become commonplace during the past forty years. Protections of collective bargaining and union organizing were even included in the National Labor Relations Act of 1935. How much do these innovations owe to the precedents established by the NIRA?

Of course, the social and political consequences of the NIRA, particularly after 1935, would be most difficult to identify and quantify. In particular, any examination of the years after 1935 must separate the independent effects of the NIRA from the impacts of other New Deal legislation which followed the Schechter Decision.

Any long-run consideration of the NIRA (or, more generally, the New Deal) would still require a precise estimate of the economic impact in its infancy. This study not only provides answers to the specific questions about redistribution and economic recovery, but also can serve as a foundation for further analysis of the New Deal.

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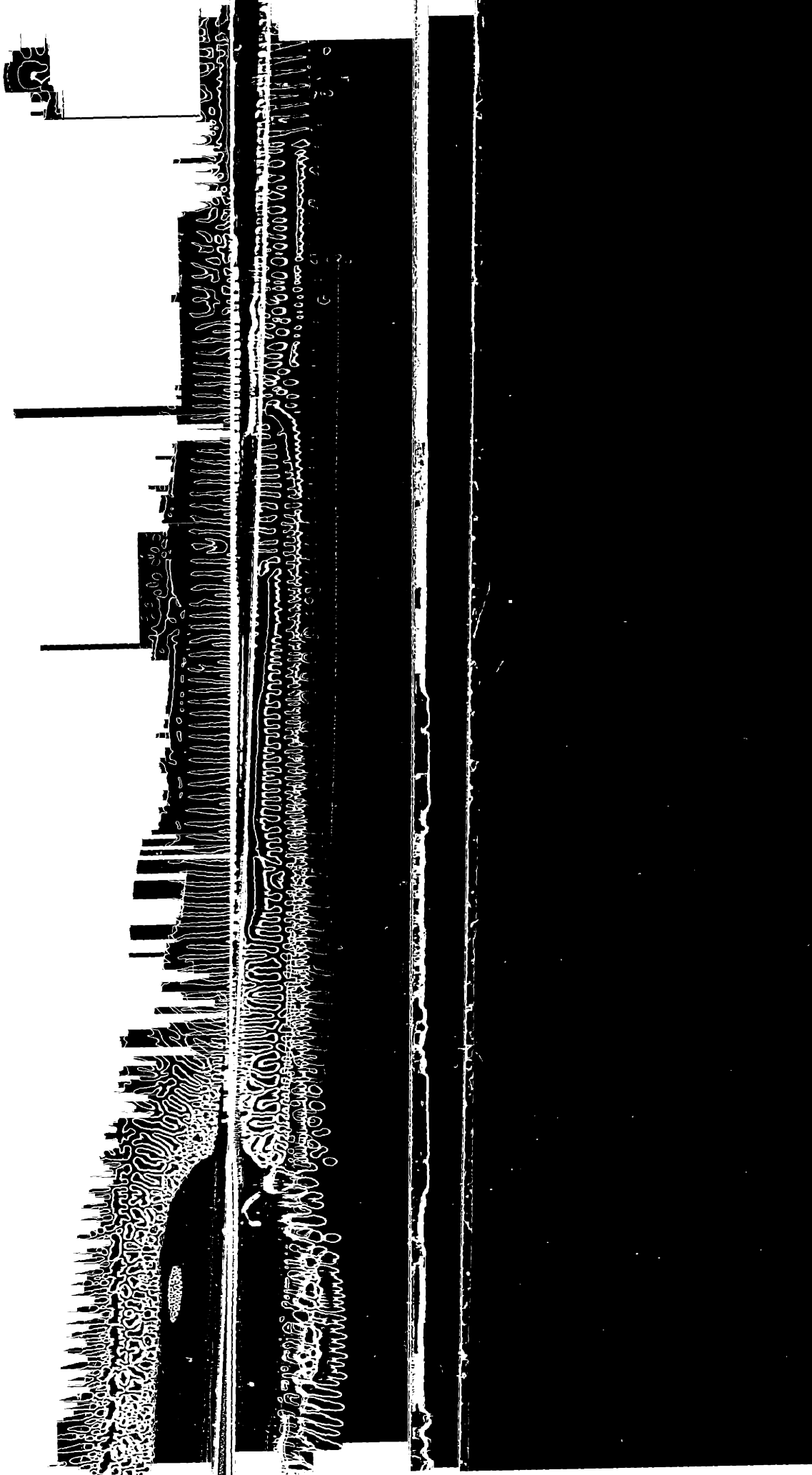


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