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*Stanford University and IZA*

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## ABSTRACT

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# American Workers' Experience with Socialism During the World Wars

The operation of American labor markets during the two World Wars is described and the well-being of civilian workers during those years is assessed. These were periods when decentralized capitalism was replaced with a system of centralized direction and control that some would call socialism. The state's activities were those of a monopsonist - the dominant or, even, single buyer - in the markets for many goods and services. Why was decentralized capitalism discarded as a mechanism to allocate resources during these critical periods? How well did civilian workers fare during these years?

**JEL Classification:** J20, N32, P23

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# AMERICAN WORKERS' EXPERIENCE WITH SOCIALISM DURING THE WORLD WARS

John Pencavel

## I. INTRODUCTION

The evidence offered to support the claim that Capitalism is a superior system for allocating resources often draws upon evidence from cross-country contrasts of regimes: the economic performance of places in which individual agents respond to market prices in open societies in which the state occupies a relatively small role is compared with the economic performance of places in which the state directs the allocation of resources and coerces agents to follow its directives. The exemplar of this type of comparison is provided by the collapse of the Soviet Union and its client states and the relative success of the American and companion liberal economies.

A shortcoming with such contrasts is that societies differ not only in their systems of resource allocation but also in other things including their values, their traditions, their legal system, and their endowments. These other factors - typically neglected in these comparisons - may account for the relative economic performance of countries.

A different approach is historical, examining resource allocation in a given country and comparing periods in which the state in that country plays a conspicuous part with periods in which the state leaves most of resource allocation to individual agents who, in turn, respond to the signals set by the market. With such a comparison, a stronger case can be made that values, traditions, legal systems and endowments are constant in the two periods. This is the general idea behind the narrative below which describes the operation of American labor markets in the two World Wars, episodes that have been called "war socialism" .

Fortunately, years when a country is engaged in a transcendent war are abnormal, but these years may well contain information useful in understanding alternative methods of resource allocation. The two World Wars were the most perilous moments for America in the twentieth century. They were occasions requiring a substantial reallocation of resources away from peacetime

consumption toward military production. Such resource allocation questions are bread and butter issues for economists who learn early in their education that, under certain conditions, agents operating in decentralized competitive markets and free of dictation by a central authority may be very effective in allocating scarce resources. Calling such a society Capitalist, many Americans have relished its description as a land of Capitalism.

Yet, at critical moments in the last century when the most efficient and capable system was needed, America turned away from unregulated *laissez faire* and toward a system of direction and command by centralized authorities. Why did America reject the use of unfettered markets with resources allocated by price signals and adopt a system where critical decisions were made by centralized agencies that could call (and did call) upon unconcealed coercion to achieve its directives? What was the performance of this system of centralized command and control ?

No complete and thorough answer that covers all aspects of the economy will be attempted here to these questions. What is presented is a focus on one class of markets - the markets for the services of labor . How did the command and control system adopted by the United States in these wars affect the material well-being of civilian workers? To answer this question, I rely on the earnings and employment information collected by the U.S. Bureau of Labor Statistics.

For the purposes of this paper, Socialism is defined as a system in which a centralized authority, the state, plays the principal role in resource allocation. The state is such a large consumer of goods and services that it has the monopsonistic power to render production units heavily dependent on its policies and preferences. If these policies and preferences are not respected, the central authority may apply punishments and coercion to secure compliance. Unlike Capitalism,

prices play a secondary role and movements in prices are permitted only when they do not conflict with the state's objectives. Many think that an essential feature of Socialism is the state's ownership of key production units and this will be included in the definition of Socialism here even though some do not require it (Roemer(1994, pp. 18-24) .

Finally, at least in open societies, Socialist administrations are inclined to be sympathetic with workers' organizations such as trade unions. This might take the form of amending the regulations on the formation of such organizations that results in a larger fraction of workers represented by them or of involving representatives of unions in the administration of the state.

This definition of Socialism is consistent with certain other descriptions. Schumpeter's (1950, p.167) definition is close to the one above: "an institutional pattern in which the control over the means of production and over production itself is vested with a central authority."<sup>1</sup>

This paper is an essay in positive not normative economics's: neither to endorse nor to renounce the methods employed to prosecute the wars, but to describe these methods and to ask why these methods were employed. After providing a brief description of the operation of America's labor markets in the two World Wars, this paper assesses whether the replacement of lightly regulated markets by a command and control system benefitted or harmed civilian workers.

## II. THE FIRST WORLD WAR

The outbreak of hostilities in Europe in August 1914 led to an increase in the combatants' demand for American goods. Also, markets outside Europe were denied European goods and American exports were in demand in their place. Notwithstanding the interference of trade from the

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<sup>1</sup> Schumpeter goes on to recognize that there are "many acceptable ways" of defining Socialism and that the power of the central authority is not absolute: it "...may have to submit its plan to a congress or parliament" and "almost any amount of freedom might be left to the 'men on the spot'" .

British naval blockade of Germany and the German submarine campaigns, the U.S. economy met many of these demands and expanded between 1914 and 1917 as shown by the production index in Table 1.

In April 1917, after Germany's resumption of unrestricted submarine warfare in the Atlantic and the release of Zimmermann's telegram, America declared war on Germany. The first registration of young men aged 21 to 31 years for military service followed in June (later expanded to 18-45 years). The first and second registrations in June 1917 and August 1918 listed 10.7 million men with almost 2.7 million inducted (Ayres (1919) , p. 17). Given that there were fewer than 200,000 men in the American Armed Forces when war was declared, this represented a substantial increase in the size of the military and a negative shock to civilian employment. Women entered the labor market to help offset these checks to civilian employment Greenwald (1980). These disturbances occurred when the needs of the military for matériel were large and urgent.

This coincident decrease in the supply of labor to production and increase in the demand for labor to produce the goods for the military caused an increase in wages in 1917 over their 1914 levels. (Table 2) This was not engineered entirely by an invisible hand but also by the visible agitation of workers. Labor market conditions favored the bargaining power of workers who clamored for trade unions to represent their interests.<sup>2</sup>

Many government departments were unprepared for the declaration of war and, in the contracts signed with eager firms, delivery dates were often specified without these firms having the

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<sup>2</sup> Table 2 reports the average hourly compensation of production workers in manufacturing which was substantially higher in 1919 than in 1914. There is no series on wages covering all workers. The pay of workers in other industries (such as coal mining, railroads, construction, printing, and farming) was also much higher in 1919 than in 1914. See BLS Bulletin No. 852 (1945) .

necessary workers on hand. The consequences were dissimilar wage rates across workplaces for the same type of labor resulting in disputes between workers and managements with interruptions in production. With employment rising, labor turnover was high in part “...caused by the competitive bidding [for workers] by war contractors and often by government departments themselves who were anxious to get their own particular job done and were protected against increased labor cost by either cost plus contracts or by the absorption by the government of the added labor cost” (Douglas (1919), p. 547). Instead of each government department dealing with these problems differently, some coordination in the rules regulating these contracts might avoid worker discontent.<sup>3</sup>

The U.S. Department of Labor<sup>4</sup> invited representatives of employers’ associations and the American Federation of Labor to constitute a body to make recommendations about how best to deal with industrial disputes that interfered with production. In April 1918, the group became the National War Labor Board (NWLB).

President Wilson stated that the Board’s purpose was to settle disputes “in the field of production necessary for the conduct of the war”, a broad domain. The NWLB consisted of 12 members: 5 representatives of employers (originally selected by the National Industrial Conference

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<sup>3</sup> A close observer, Leon C. Marshall, economist and Dean at the University of Chicago, wrote, “A survey of the situation [in 1917] would convince the most pronounced advocate of *laissez faire* that his dogma is not applicable to the needs of the case” (Marshall (1918) p. 434). “Fights over prices, purchases, and the rest abounded in an organizational landscape that grew more chaotic every day. Emergency agencies sprang up in great profusion and aggressively competed for policy-making authority.” (Cuff and Urofsky (1970), p. 292).

<sup>4</sup> The Department of Labor was young, having been established in 1913 with the purpose “to foster, promote and develop the welfare of working people, to improve their working conditions, and to enhance their opportunities for profitable employment”. The first Secretary of Labor was William Wilson, a founder and former secretary-treasurer of the United Mine Workers of America. He described the Labor Department as being created “in the interest of wage earners”. MacLaury (1998).



Board); 5 representatives of workers (originally selected by the American Federation of Labor); and two people representing the interests of the public. The Board operated as a court that adjudicated cases brought by litigants. The most frequent complaint concerned wages; hours of work ranked second; and discrimination against employees for union membership came third (BLS Bulletin No. 287 (1921), pp. 22-3). Although it operated for only 16 months, the Board's decisions affected workers in more than 1,100 workplaces (BLS Bulletin No. 287 (1921)) and, in establishing standards to which others might conform, its influence was wider.

#### Labor-Management Disputes

The Board declared that "there should be no strikes or lockouts during the war" and the Board was asked to mediate labor-management disputes that, if unresolved, would result in strikes or lockouts and a suspension of production. The leadership of the American Federation of Labor offered to abstain from instigating strikes, but the rank-and-file made no such offer nor did the Industrial Workers of the World. Moreover, the workers affiliated with the AFL constituted a small fraction of the work force and no organization could ensure nonunion workers - over eighty percent of non-agricultural workers - would not strike. Indeed, the entries in Table 2 show that over 3,000 strikes per year began during the life of the Board and many of these involved nonunion workers whose goal was to induce their employers to recognize a trade union as their agent in the workplace.

#### Trade Unions

The Board operated on the principle that workers had the right to form unions and to have their concerns addressed in collective bargaining with employers without fear of retaliation.<sup>5</sup>

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<sup>5</sup> The Clayton Act of October 1914 had already exempted trade unions from the scope of anti-trust law. Before this Act, some of the judiciary interpreted trade union activities as constrained by the Sherman Anti-Trust Act of 1890.

Employers were precluded from discriminating against union members and from establishing a rival company union controlled by management. It was hoped this would render unnecessary strikes with the goal of persuading an employer to recognize the union as the workers' agent.

If unions even in embryonic form did not exist, the Board encouraged the creation of Shop Committees where managers and workers would meet to exchange information about production and the organization of the workplace.. Douglas (1921) suggested unions and these Shop Committees tended to work well together and were not substitutes although many employers were inclined to view Shop Committees as replacing unions and collective bargaining.<sup>6</sup>

#### Wages

In disputes over wages, the Board accepted the notion that the wage should be at a level "which will permit the worker and his family to subsist in reasonable health and comfort" calling this a "living wage".<sup>7</sup> Employers were assured that their government cost-plus contracts would cover the higher costs that increased wages would imply.

With respect to wage differentials, the Board declared women ".....must be allowed equal pay for equal work and must not be allotted tasks disproportionate to their strength." The Board also ruled against lower wages for "colored" workers.<sup>8</sup> This indicates the Board's broader concern

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<sup>6</sup> "Every record of N.W.L.B. shop committee elections indicates that unionists took control of these committees.....Moreover, once they controlled shop committees, union militants frequently used them as front organizations through which to present union demands to their open-shop employers." (McCartin (1997), p. 100).

<sup>7</sup> "In the absence of a legislated minimum wage in 1918, the N.W.L.B. - through awards and publicity - virtually set an unofficial minimum wage, and, in that year, common laborers earned a higher real wage than ever before in industrial America." Conner (1983, p.67).

<sup>8</sup> Thus, in a case involving Little Rock Laundries in November 1918 "The board has also decided that colored women should receive pay equal to that received by white women for equal work." In

with narrowing wage differentials as illustrated in their rulings in the Bridgeport case below. Consistent with this, in their history of American income inequality, Williamson and Lindert (1980, p.77) conclude from examining a variety of income information that “World War I had a remarkable egalitarian impact on America”.

### Hours of Work

The Board ruled that working hours should be determined by the workers’ and employers’ agents taking account of “governmental necessities and the welfare, health, and proper comfort of the workers”. This vague language allowed employers to set hours as they wished claiming the hours were required to meet the government’s war needs. At the same time, the Board’s characterization permitted unions to campaign for the eight hour working day, a major union objective, on the argument that shorter hours were more productive hours and, therefore, shorter hours do not necessarily imply lower output.

There had already been movement towards an eight hour day. In response to the threat posed by the unionization of his plants, in 1914, Henry Ford had set an eight hour day for his workers. In 1916, Congress had passed the Adamson Act that set a standard of an eight hour working day with premium pay for hours worked beyond this threshold; some industries had followed this lead of Congress even though many other employers resisted a new norm.<sup>9</sup>

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another case involving railway conductors employed by Detroit United Railway Co. in January 1919, “...there should be no discrimination against women or colored men...”. These decisions are reported in BLS Bulletin No. 287 (December 1921) in Chapter IV, page 70.

<sup>9</sup> Table 1 reports that the average weekly hours of work of production workers in manufacturing rose between 1914 and 1917 so that the increase in the input of labor in production was effected not only by an increase in employment but also in longer working hours. These longer hours were often worked at premium rates of pay. Hours fell as the war came to an end.

A well-known dispute over the length of the working day that came before the NWLB concerned the work schedule at two plants of the Worthington Pump Company that made pumps for ships. The employers stressed the urgency of the pumps for the destroyers in the Atlantic that were protecting American shipping from Germany's U-boat campaign. The representatives of labor cited instances of shorter hours so improving the welfare and health of workers that production was barely affected. When the Navy Department declared itself "to be a strong advocate of the eight hour day" (Conner (1983, p. 99)), labor felt vindicated. The Board recognized the eight hour day as the new norm and implemented it in many of the cases that came before it.

#### Enforcement

The Board lacked powers to enforce its decisions. It depended on support from the general public and government agencies for approval of its awards. There were instances of refusal to abide by the Board's decisions. The Western Union Telegraph company declared it would not comply with the Board's order to cease its practice of not employing trade union members. President Wilson asked the company to follow the Board's decision. After the company refused and their employees threatened to strike, telephone and telegraph lines were taken into public ownership for the duration of the war!<sup>10</sup>

Another case of resistance to the Board's decision concerned the munitions workers at the Bridgeport Remington-UMC plants which were producing much of the small arms and ammunition

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<sup>10</sup>The legal authority for the Government's seizure of workplaces derived from the National Defense Act of 1916 which gave the President the authority ".....in time of war or when war is imminent, to order any individual or firm having the facilities to comply, to furnish supplies or equipment for the Army in preference to any other commitments, at prices named by him; and in case of default, to seize and operate the plant. Similar power to requisition shipyards and factories for the manufacture of supplies needed for the Navy was vested in the President by the Naval Emergency Fund Act of 1917." Berdahl (1921, p. 210)).

for Europe. In addressing a dispute over wages, the Board decided on larger wage increases for lower-paid workers than for the higher-paid skilled workers, something that the skilled workers resented. They had complained that the hiring of women and immigrants had resulted in the deskilling (or “dilution”) of their jobs. These skilled workers refused to end their strike. The President responded by threatening to cancel the strikers’ military draft exemptions<sup>11</sup> and by ordering employers to take back into employment all striking workers. The striking workers returned to work (Bucki (1980) ).

A third dispute involved the Smith & Wesson company, a manufacturer of guns and ammunition in Massachusetts which was requiring each worker, as a condition of employment, to sign a statement promising not to join a union. Employers sometimes called these “individual employment contracts”, but they were not contracts in the familiar meaning of the word in which the terms of the transaction and the obligations of the employee and employer were clearly specified. They were simply a device that allowed an employer to maintain a non-union labor force. They were termed “yellow dog contracts” by unions. In a controversial decision in 1917, the U.S. Supreme Court had determined such arrangements were legal and, in the 1920s, they became a common device for employers to resist unionism.

When the issue was brought to it, the War Labor Board ruled against the Smith & Wesson company “for the period of the war”. The Board reasoned that “when representatives of the leading employers of the country agreed to the principles of the Board they waived their legal rights.....just as in substance the trade union leaders had waived their right to conduct strikes” (Gregg (1919, p.54).) Nevertheless Smith and Wesson refused to give up this method of keeping the union at bay.

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<sup>11</sup> Workers in occupations deemed critical to the war effort were exempt from conscription.

President Wilson responded by directing the War Department to possess the plant. Another government seizure was in December 1917 when the government took control of most of the railways.

These seizures of plants were accompanied by “just compensation” and by the understanding that public ownership would be temporary. (Government control of the railways ended in 1920.) The compensation was sometimes generous: in 1917, 855 ‘short-line’ railroads complained to Congress that they had been omitted from Presidential seizure of the railroads and, therefore, omitted from the compensation paid. Over President Wilson’s objections, Congress extended the seizure to cover these ‘short-line’ railroads ( Blackman (1967 p. 69)).

#### The State’s Ownership of Production Facilities

In addition to the state’s possession of Smith & Wesson, the telephone and telegraph lines, and the railroads, the government built and operated a number of plants including a facility in West Virginia, making armor plates and 53 plants producing explosives. The state created and operated a merchant fleet. These activities competed with private companies. The U.S. Navy expanded its shipyards to build submarines, destroyers, and submarine chasers. By the end of the war, the Navy’s eight shipyards employed about a hundred thousand workers (Wilson (2016, p. 15)). Some of these state-owned production units were managed by government departments and others were managed by contractors. These state-owned ventures ended within a few years of the conclusion of the war.

#### The Armistice

Employers who had accepted the Board’s rulings during hostilities on the western front, immediately upon the armistice in November 1918, asserted the Board now lacked authority and started to disregard the Board. However, in December 1918, President Wilson asked the Board to

continue its activities and, for a few months, cases continued to be taken to the Board . In due course, fewer cases came to the Board's attention and its last meeting was in August 1919.

#### A Postscript

A short but steep contraction from January 1920 to July 1921 marked the war's end and the conversion to a peacetime economy: prices, nominal wages, production, employment, and weekly hours of work declined. Without the support of the National War Labor Board, trade union membership fell and employers regained their bargaining advantage over workers. The war years had seen rising wages, employment, and union membership and, at least materially, these years were relatively advantageous to civilian workers; by comparison, the 1920s became the "Lean Years" (Bernstein (1960)) for labor.

In retrospect, the activities of the National War Labor Board anticipated the labor market reforms in the 1930s.: yellow dog contracts were outlawed by the Norris-LaGuardia Act; other employer anti-union activities were prohibited by the National Labor Relations Act ; the support given to wages was embodied in the Walsh-Healey Public Contracts, Davis-Bacon, and the Fair Labor Standards Acts; normal weekly hours of work were specified in the Fair Labor Standards Act. In this way, the general principles followed by the Board were subsequently incorporated into law. <sup>12</sup>

Although American involvement in the war was short, using regulations on wages and prices, on labor-management relations, and on other aspects of the economy, the Federal Government demonstrated it could marshal resources in such a way that a well-defined goal could

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<sup>12</sup> Writing of many war agencies, Rockoff (2005, p. 338) writes "...almost every government program undertaken in the 1930s reflected a World War I precedent and many of the people brought in to manage New Deal agencies had learned their craft in World War I."

be attained. At the same time, this did not come about at the cost of the typical civilian worker's material well-being: this worker enjoyed rising income, greater employment opportunities, and fuller representation at the workplace. This apparent successful experience provided the rehearsal for resource allocation in a larger conflict two decades later.

### III. THE SECOND WORLD WAR

#### The Prelude

After the contraction of 1937-38 and before America was at war, the economy was expanding: production, employment, and working hours were rising and the unemployment rate was falling. (Table 3) With the international situation becoming more ominous, the Roosevelt administration moved cautiously to prepare for the possibility of armed conflict. A "limited national emergency" was declared in September 1939 and an "unlimited national emergency" in May 1941.

In September 1940, the Selective Training and Service Act required all men aged between 21 and 36 years to register for the military. A year later, the age range was expanded to between 18 and 45 years. In 1940, the Armed Forces consisted of 540,000 men on active service. By mid-1941, the number had tripled to 1,620,000. As civilian employment numbered about 46 million people at this time, the reallocation of almost two million young men to the military represented a negative shock to the supply of civilian labor.

The substantial growth in women's market work partly offset these movements of men into the military.<sup>13</sup> Women's market employment (aged 14 years and more) reached almost 20 million

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<sup>13</sup> "The number of employed women [aged 14 years and over] increased by 35.4 percent in a period of a little more than 2 years - from the week preceding the Pearl Harbor attack to the week of March 5 to 11, 1944.....More than half of the new entrants had come to work from their homes and about



in 1945 representing 36% of all paid civilian workers and 37 % of all women in the adult population (Women's Bureau Bulletin No. 255, p.2) . The expansion of the economy and growth of trade union membership. (Table 4) raised the concern that the new mechanisms contained in the National Labor Relations Act for union recognition would result in work stoppages interfering with production in key industries. In March 1941, President Roosevelt formed the National Defense Mediation Board (NDMB) to mediate management-labor disputes. This Board was made up of representatives of workers, management, and the public, a composition also used for the National War Labor Board.

Six months later, a strike in the coal industry curtailed production in a number of plants relying on coal (including the important steel plants) and the NDMB was called upon to settle the dispute. This dispute arose from a union security clause that the United Mine Workers wanted in the collective bargaining agreement, a clause stipulating that all workers covered by the contract would pay union dues .The owners of the coal mines (many of them steel companies) refused to add this clause to the contract.

The union's attempt to establish a union shop was an issue that arose in many disputes during (and after) the war. Attempting a compromise, most of the members of the NDMB proposed that a new worker not be required to pay union dues, but that any worker who is a union member at any moment was to pay union dues until the contract expires. This was called a "maintenance-of-membership" clause in a contract.<sup>14</sup> Because all members of the NDMBoard would not sanction the UMW's demands, those (two) members representing the unions from the CIO (Congress of

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a third of them had been in school." Pidgeon (1944, pp. 2-3). Goldin (1991) takes up the issue of the degree to which the Second World War represented a permanent upward shift in women's propensity to work in the market.

<sup>14</sup>Hammond (1943) discusses the various union security clauses during the war .

Industrial Organizations) resigned, The coal strike resumed and no more disputes were sent to the Board. After only ten months, the Board ceased operations.

In its short life, the NDMB ruled on two additional disputes in which its decisions for their resolution were not accepted by the parties and which induced the government to seize the workplaces. The companies were *Federal Shipbuilding and Dry Dock Company* and *North American Aviation* (subsequently *Rockwell International*). The legal authority for these seizures was contained in the Selective Training and Service Act which gave the President the authority to place orders and contracts for war-related materials that would “take precedence over all other orders and contracts”. In Section 9 of the Act, the President was granted the power to “take immediate possession of any plant” that did not comply with the orders of government agencies. The owners of such plants would receive “fair and just” compensation for the seizures.

Section 9 was invoked when these two companies failed to abide by the NDMB’s rulings. With *North American Aviation* where workers were complaining about grueling working hours, the union local in California refused to call off a strike while the NDMB considered the issues. The government’s seizure took the form of more than 2,500 troops with fixed bayonets disrupting the picket lines. The War Department assumed the operation of the plant. The local board stripped some striking workers of their deferments (Blum, 1967, p. 199) and the strike soon ended.

In the case of *Federal Shipbuilding and Dry Dock Company*, the company refused the NDMB’s ruling that called for the addition of a maintenance-of-membership clause to the contract. The property was seized in August 1941 and operated by the Navy Department.

In April 1941, with the U.S. still not at war, state militia were used to suppress a strike at a machinery manufacturing plant (Allis-Chalmers) near Milwaukee, Wisconsin. Again, one issue in

contention was a union security clause to which the employer objected .

The brief life of the National Defense Mediation Board was not unusual for government agencies at that time. Similar to the First World War, as America's involvement in the war became more probable, many government agencies were established sometimes without clear overall guidance of the purpose of each and some were soon disestablished.<sup>15</sup>

#### America at War

By January 1942, America was at war with Germany, Italy, and Japan. With war on two fronts and with "...war preparations almost nonexistent" (Harrison (1988) , p.173), there was a simultaneous increase in the demand for labor to produce the requirements of the military and a decrease in the supply of labor to the civilian market as workers were conscripted into the Armed Forces. The result of these shocks was upward pressure on wages accompanied by growing trade union membership.

At this time, the National War Labor Board (NWLB) was recreated with two overriding goals: to prevent labor-management disputes from interrupting production and to contain rising wages the war economy was expected to generate. The Board's authority embraced all issues over which disputes might arise between workers and employers with the exception of disputes over unfair labor practices which remained the province of the National Labor Relations Board. The NWLB operated with some general principles as described below.

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<sup>15</sup>For instance, the War Resources Board was set up in August 1939 and then closed down in November; the National Defense Advisory Commission was created in May 1940 and then its labor responsibilities were taken over by the Office for Emergency Management a year later; the Supply Priorities and Allocation Board was established in August 1941 and wound up four months later.

## Wages

Initially, the Board's wage controls were restricted to cases in which the employer and the union disagreed on a wage change. The Board was asked to resolve the conflict. If both parties concurred on a change in wages, the Board had no jurisdiction over the case. Because union membership represented about one-quarter of non-agricultural employment (Table 4), the wages of most workers (the non-union workers) were outside the Board's scope.

The Board's work was extended in October 1942 by Executive Order 9250 which specified that wages were not to exceed those reached between January and September 1942 unless one of three conditions was satisfied: a wage increase was required to correct a blatant inequity; or existing wages were at a sub-standard level and higher wages were needed to rectify this; or a pay increase was necessary for a firm to attract workers to an activity that involved production essential for the prosecution of the war.

Further, the NWLB's control over wages was extended to changes not in dispute. The wage changes of public sector and farm workers remained outside the Board's remit. Most small firms (with 8 or fewer employees) were not covered by the wage regulations. The incomes of high salaried workers were monitored by the Treasury Department. The increase in the Board's work was addressed by creating regional offices and industry-specific boards each with representations of workers, employers, and the general public.

Therefore, when a firm or a union approached the Board for approval of a wage increase, the Board's response drew upon the following guidelines:

(i) From 1941 to mid-1942, the Board would be likely to sanction a wage increase if it matched the increase in consumer prices. After mid-1942, the Board granted no wage increases on this criterion.

(ii) The Board would approve a wage increase if the wage were at a substandard level. This required the Board to determine a threshold for wages that constituted a minimum. The Federal minimum wage had been set at 30 cents an hour in October 1939 and would not be raised to 40 cents until October 1945. In 1943, the Board used a 40 cent hourly threshold to denote the lowest pay allowable for a “decent” standard of living; wages beneath this level were deemed “sub-standard”. This threshold was raised to 50 cents in 1944 and it reached 55 cents an hour in 1945. By permitting increases in the wages of those with substandard wages without sanctioning increases in wages for other workers, the Board narrowed wage differentials (Parrish (1948)).

(iii ) The Board would accept a wage increase if the increase would correct an inequality in pay between workers doing the same work in different plants or between workers doing the same work in the same plant. Following this principle, the Board directed the elimination of wage differentials between women and men and between black and white workers doing the same work.<sup>16</sup> The elimination took the form of raising the pay of women to that of men and of raising the pay of black workers to that of white workers.

The working conditions of black workers received special attention through the establishment of the Fair Employment Practice Committee (FEPC) by Executive Order in June 1941. As with other government agencies during the wars, it responded to complaints brought to it; it did not instigate inquiries of employment discrimination. There is disagreement on the importance of the

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<sup>16</sup> On Gender, see pages 290-91 of Volume I of National War Labor Board (1945). On Race, see pages 339-340 of Volume II of National War Labor Board (1945) . Thus, in the case of the Southport Petroleum Company and the Oil Workers’ International Union, the Board directed “The classification ‘colored laborer’ and ‘white laborer’ shall be abolished. All workers affected shall be classified as laborers and shall receive the same rates of pay for that classification regardless of color.”

FEPC for black-white earnings differentials (Collins (2002)) although there is no disagreement over the fact that these differentials narrowed in the 1940s.<sup>17</sup>

(iv) In January 1942, there seemed ample supplies of workers from the pool of the unemployed and from those outside the labor force who could be induced by higher earnings into it. By October, Executive Order 9250 recognized reductions in this pool and the Board was permitted to ratify a wage increase if a workplace producing war supplies could not attract sufficient workers and the War Manpower Commission had acknowledged that the firm had made genuine attempts to recruit workers but had failed.<sup>18</sup> Although there were cases of severe shortages of labor for the production of important goods, these were unusual.<sup>19</sup>

Indeed, the labor force participation rate in 1944 reached its highest level during the first sixty years of the 20<sup>th</sup> century and the unemployment rate (at 1.2 per cent) in 1944 was the lowest. The reduction in the numbers unemployed between 1939 and 1944 represented 46 percent of the increase in the total number employed (the sum of civilian employment and the Armed Forces) between 1939 and 1944.<sup>20</sup> “Hundreds of thousands” (Vatter (1985) p.17) of additional employees

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<sup>17</sup> Reed (1991. pp.346-7 ) argued “The FEPC’s special contribution....was its emphasis on the qualifications of each worker and the quality of the job. All defense employment should be open to qualified applicants, regardless of race or religious preference, it insisted.....That market forces alone, in the absence of an FEPC, could have overcome prejudice and produced a similar emphasis upon quality is doubtful.” On the movement of black-white earnings differentials in the 1940s, see Maloney (1994), Margo (1995), and Smith and Welch (1989)

<sup>18</sup> The War Manpower Commission was created by Presidential Executive Order 9139 in April 1942 with the goal of resolving competing employment demands of the civilian and military sectors.

<sup>19</sup> Parrish (1950) provides examples.

<sup>20</sup> Lebergott (1964, Table A - 3) reports total employment was 46.1 million in 1939 and 65.4 million in 1944. The total number unemployed was 9.48 million in 1939 and 0.67 million in 1944.

and Armed Forces recruits came from agriculture.<sup>21</sup>

As a supplement to earnings that would attract workers to a particular employment, some firms introduced fringe benefit additions to wages such as insurance premiums for health, payments into pension programs, and vacations with pay. The Board approved these as a means of recruiting needed workers and wrote “insurance and pension benefits in a reasonable amount were excluded in the computation of salaries and wages for the purpose of the stabilization program”

In trying to suppress wage inflation, the Board found itself changing the wage structure. Their attempts were eased by the fact that the government also attempted to restrain the increase in consumer prices both by explicit controls on price increases and by rationing. As Dunlop (1950) noted, America was unusual among countries at war in having the agency that monitored wages different from the agency that monitored prices.

In petitioning the Board for its approval of a wage increase for a particular class of workers, firms found the need to rationalize a wage structure that was often “in a chaotic state in the sense that the pattern of wage scales could not be justified on an ethical or efficiency basis.... By its policy of eliminating and/or preventing intra-plant wage inequities, the Board has done much to rationalize the American wage structure.”(Shister (1945), p. 49)

The nominal and real hourly compensation of production workers in manufacturing (Table

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<sup>21</sup> These numbers are from Table A-3 of Lebergott(1964) and describe those aged 14 years and more. The labor force figures are the sum of those in the civilian labor force and those in the Armed Forces. The unemployment rate is the estimated number unemployed as a percent of the civilian labor force. Lebergott’s unemployment figures (and those of the BLS) have been challenged by Darby (1976) for including in the count of the unemployed those people employed in government relief programs such as the Works Progress Administration. If these government workers are cut from the count of the unemployed the unemployment rate in Table 3 is lower than that in Table 3, but the reduction in unemployment from 1939 to 1943 exceeds 80 percent for both measures.

5) rose throughout the years of the Board's operations (from 1942 to 1945).<sup>22</sup> The earnings of workers in other industries reveal the same pattern.<sup>23</sup> The growth in real hourly compensation of these manufacturing production workers in the years from 1942 to 1945 (the years of the Board's activities)<sup>24</sup> exceeded the growth of these workers' compensation in the years immediately preceding (from 1938 to 1941) and their growth in the years immediately following (1946-49) the Board's operations. (Table 6).<sup>25</sup>

Table 6 reports movements in two indicators of earnings inequality: Gini's coefficient and the fraction of total income received by those whose earnings were below the 90<sup>th</sup> percentile. Both show a decline in earnings inequality during the war compared with their levels before the war. Earnings inequality continued to fall after the war although the decline was less than that experienced during the war years. The reduction in earnings inequality in the 1940s is also documented by Miller

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<sup>22</sup> These observations on compensation include the value of fringe benefits. Real hourly compensation of these workers peaks in 1944 after which it changes little until the end of the decade.

<sup>23</sup> Thus from 1941 to the end of the war, the nominal and real pay of the following workers rose: longshoremen handling general cargo in both the North Atlantic and Pacific ports (*BLS Bulletins 1960* and *2063*); bituminous coal miners (*BLS Bulletin 2062*); regular miners in Butte Montana at Anaconda Mining (*BLS Bulletin 1953*); standard mechanics at Bethlehem Steel (*BLS Bulletin 1866*); and AT&T operators in the long lines department in New York (*BLS Bulletin 1812*).

<sup>24</sup>The Board was set up in January 1942 and it ceased work in December 1945. 1942 was the first full year of war and it also marks the establishment of the National War Labor Board. "Certain features of peacetime still clung to 1941.....The period of all-out war economy spanned about four long years. The level of military expenditures in the last quarter of 1945 was still high at 25 percent of GNP - much above 1941's last quarter at 16 percent." (Vatter (1985), pp.11-14)

<sup>25</sup>The price index used to deflate nominal earnings in Table 5 is Officer's (2007) which draws upon BLS data. These have been criticized by Friedman and Schwartz (1982, pp. 101-4) as understating price increases. If the series proposed by Friedman and Schwartz is used to deflate nominal earnings, the percentage change in real earnings from 1941 to 1946 is lower than that implied by Officer's series in Table 5, but it remains positive.



(1958) and Goldin and Margo (1992). They also suggest the reduction was greater in the war years.

### Labor-Management Disputes

The second task of the National War Labor Board was to contain the number and the effects on production of labor-management disputes, Table 4 reports the number of strikes beginning in each year from 1937 to 1950. The number for 1944 exceeds any previous year notwithstanding appeals from various people and organizations for workers not to strike and for managers not to lock out workers for the duration of the war. The leaders of both the AFL and the CIO expressed their support of a policy of no strikes and “Labor organizations in numerous localities passed resolutions pledging full support to the Government and in many cases promised there should be no strikes interfering with the production of war materials” (BLS Bulletin No. 711, p.1).<sup>26</sup>

However, there were unions (so-called independent unions) that belonged neither to the AFL nor to the CIO. Over 70 percent of workers belonged to no union. Hence, the leaders of the AFL and CIO spoke for a minority of workers. It might have been easier for the government to reduce interruptions in production if more workers had been unionized and affiliated with the AFL or CIO. Indeed, when the number of strikes are arranged by the organization with which the union initiating the strike is associated, as in Table 7, the percent of strikes in the years 1942-45 called by unions associated with either the AFL or the CIO is smaller than the corresponding fraction before the war and after the war. Wildcat strikes, unauthorized by the union leadership, were particularly difficult to prevent in some of the isolated coalfields.

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<sup>26</sup> The BLS records a strike if it involved 6 or more workers and lasted as long as one day whether the interruption was initiated by the workers or by employers (a lockout). A “sit-down” or a “stay-in” at the place of work was counted as a strike. Strikes did not include secondary effects at workplaces made idle as a result of material or service shortages.

In addition, strikes during the War tended to be of short duration (Table 6) and, in this respect, they were less damaging to production than the longer strikes in peacetime. In 1944, the war year with the largest number of strikes more than one-half of these strikes lasted three days or fewer. More generally, the typical strike during the war years was about two weeks shorter than that in peacetime; the incidence of long strikes (those lasting at least one month) during the war was one-third of strikes in peacetime; and two-thirds of the strikes during the war lasted less than one week.<sup>27</sup>

While the National Labor Relations Act helped in securing an employer's recognition of a union as an agent of the workers, it did not require an employer to acquiesce to a union's bargaining demands. The Senate discussing the act observed that "...the duty to bargain collectively does not carry with it the duty to reach an agreement" and the Supreme Court ruled similarly. (Rosenfarb (1940 pp. 196-203)). The law's reference to bargaining "in good faith" left opportunities for an employer to stall or to refuse to consider certain demands.<sup>28</sup> The workers often had to show their willingness to "down tools" to put effective pressure on a defiant employer.

Not only were there more strikes in 1944 than any other year during the war, but also 19 disputes in that year resulted in the government appropriating the workplaces. These were disputes in which one party refused to comply with the NWLB's decisions or instances when production was halted while an issue was being resolved by the Board. The War Labor Disputes Act (also known as the Smith-Connally Act) in June 1943 authorized the President to take control of an establishment

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<sup>27</sup> During the war, worker-days "lost" through strikes in America as a fraction of non-agricultural employment were either lower than or little different from those in Britain, Canada, and Australia. (Seidman (1953, pp. 150 and 276-7) .

<sup>28</sup> Brody (1964, p. 255) provides a number of examples of uncompromising employers.

where a labor dispute risked interruption in production relevant to the pursuit of the war.<sup>29</sup>

In 1944, the Act was invoked when, protesting the violation of seniority rights, Philadelphia transit workers struck the transport agency in protest of the promotion of black workers into positions that had been the preserve of white workers. In response, President Roosevelt commanded the Secretary of War to take control of the Philadelphia Transportation Company. Workers who refused to return to work would lose their military deferments, a threat that ended the strike. In due course, black workers entered the positions that the white workers had once claimed exclusively (Winkler (1972)).

In the following year, 1945, there were 24 instances of government seizure of the workplaces. In all, there were 59 seizures of plants by the government that were associated with labor-management disputes or with non-compliance of government agency rulings during or immediately after the Second World War (Blackman (1967), pp.259-78). Strikes by workers in government-seized plants were unlawful. Government seizure was not the only enforcement mechanism available to the National War Labor Board. It could also ask the War Production Board to discontinue all government contracts with an offending firm and to bar it from bidding for future contracts.

#### The State's Ownership of Production Facilities

State-owned and state-operated plants figured prominently in production during the Second World War. Again the U.S. Navy invested in its shipyards and the Army expanded its armories. More common were plants that were built by the government, but then leased to a private contractor.

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<sup>29</sup> Although the President's war powers had already permitted plant seizures, the War Disputes Act "strengthened the legal basis for seizure" (Rockoff (1984, p. 120)).

Such state-owned and contractor-operated establishments constituted “the largest part of war-time investment in manufacturing capacity” (Wilson (2016, p.63)). The state-owned plants produced enriched uranium, plutonium, magnesium, steel, aircraft engines, TNT, warships, heavy bombers, tanks, submarines, and synthetic rubber. Most were owned by the Navy and War Departments, the Marine Commission, and the Defense Plant Corporation. After the war, many of the leases were offered for sale to the companies operating them during the war. According to Wilson (2016, p. 62), “by war’s end, the federal government would own close to a quarter of the nominal value of all the nation’s factories” .

#### IV. CONCLUSIONS

The World Wars were crucial challenges for America. The narrative above has sketched America’s methods of responding to the resource allocation demands posed by the World Wars as they pertain to the operation of labor markets. For a country known for championing the operation of decentralized unfettered markets, it is remarkable how little these methods relied upon the vaunted price mechanism. This is not a new observation.

Thus, Leuchtenburg (1964, p.85 ) writes, “World War I marked a bold new departure. It occasioned the abandonment of *laissez faire* precepts and raised the federal government to director, even dictator, of the economy.”

Similarly, of the Second World War, Vatter (1985, pp.87-8) writes that it “...produced an economic controls bureaucracy of a magnitude never known before or since in the history of our country. Exclusive of military bodies, there were in all about 165 economic and noneconomic emergency war agencies.” Higgs (1992, p. 55) determines that “...by the beginning of 1943, the economy became a thoroughgoing command system.”

Did the activities of the National War Labor Boards together with other agencies of government during the World Wars deserve being called socialism? In the Introduction to this paper, socialism was characterized as consisting of five features.

First, the state occupies a central role in resource allocation and is the dominant single purchaser of goods and services so that production units are subordinate to the state's demands. On this, note that government purchases of goods and services were one-fifth of GNP in the First World War compared with seven percent in 1914 and in 1924. The corresponding figure in the Second World War is 46 % compared with 15 % in 1939 and in 1949.<sup>30</sup>

Second, the state may resort to the coercion of agents to ensure its wants are satisfied. On this, in taking up some disputes, the War Labor Boards issued decisions that, ultimately, were enforced by the government in seizing firms and plants<sup>31</sup> and in removing (and threatening to remove) the deferments that protected certain workers from military conscription.

Third, prices and wages perform a subordinate part in resource allocation and their movements follow rules that are specified by the state and may not be those that would be revealed under *laissez faire*. The narrowing of earnings inequality during the years of the National War Labor Boards compared with their adjacent years suggests that wages followed different paths in the

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<sup>30</sup> These values are constructed from Kendrick (1961, pp.296-7) and Higgs (1987, Table 2.1).

<sup>31</sup> Note that the duration of the seizures usually lasted no longer than the war. Comprehensive information on government seizures of plants and firms is contained in Blackman (1967), Fairchild and Grossman (1959), Kleiler (1953), and Ohly (2000). There were 3 such seizures in the First World War and 59 seizures in the Second World War. The country's first Presidential seizure in war-time was Abraham Lincoln's seizure of the Philadelphia & Reading Railroad in July 1864. The railroad's workers were on strike thereby interrupting the delivery of anthracite coal used in rail locomotives and steam-ships by the Union forces. See Blackman (1987).

war years from what they otherwise would have been.

That the controlled wages were effective constraints on firms and unions is implied by the complaints the Boards received regarding their delay in adjudicating issues as their caseloads grew. If the Boards were a mere epiphenomenon, coincident with other factors but not causally affecting wages, the complaints would be quickly seen as pointless.

Fourth, for those who adhere to the notion that socialism implies state-ownership of production units, note that this ownership expanded during both of these wars and especially in the Second World War. Indicative of this, the sale of these public facilities after the Second World War “.....represented the largest privatization of public property in American history since the land sales of the nineteenth century.” (Wilson (2016, p.242)). The manner in which state ownership was extended (that is, the frequent use of state-owned but contractor-operated production units) implies that the workers in these plants were employees in private firms only in name; in reality they were government employees. Analogously, state ownership of capital has been mis-classified in research on growth.<sup>32</sup>

Fifth, with respect to workers’ organizations. in both wars, membership in trade unions increased substantially. In the First World War, the National War Labor Board facilitated new union organization or shop committees and in both wars representatives of unions sat on the Boards and helped administer the government’s labor market policies. In short, America’s experiences in the World Wars deserve the description of Socialism as defined here.

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<sup>32</sup>“Studies of productivity and total factor productivity growth have traditionally compared value added in the private sector with capital input financed by the private sector, neglecting the World War II government-financed increase in the nation’s stock of structures and productive equipment.” (Gordon (2016, pp. 552-53))

The role of the Federal Government in resource allocation rose substantially during the years of the world wars. Why were methods of direction and control by state agencies used at times of crisis for America?

One explanation recognizes that both wars occurred shortly after periods of state activism that, in turn, were responses to the widespread belief that Capitalism had failed. Thus in the First World War, the establishment of the National War Labor Board and the policies it pursued are consistent with the Progressive Era's propensity to use the authority of the Federal government to mitigate the excesses of the market economy at the beginning of the twentieth century.<sup>33</sup>

Similarly the hardship caused by the Depression in the 1930s was attributed by many to the operation of the market economy and it was widely believed that action by the Federal government was required to correct the perceived shortcomings in the under-regulated market. This was a common opinion at the time when the U.S. entered the Second World War.<sup>34</sup>

No doubt, there is merit to this explanation - that the Wars and the dominance of the Federal government in resource allocation occurred at times when Capitalism was seen as having failed - but it begs the further question of why were Americans so willing to accept statist measures to address their dissatisfaction with Capitalism. Indeed, those strongly attached to *laissez-faire* are

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<sup>33</sup> This was evident in a wide range of legislation and regulation at that time: such as the Pure Food and Drug Act of 1906, the introduction of the Federal income tax in 1913, the creation of the Federal Reserve System in 1913, the anti-trust Clayton Act in 1914, the establishment of the Federal Trade Commission in 1914, and the extension of the franchise to women in 1920. Many had adopted a skeptical view of the social benefits of private enterprise and believed the market required extensive oversight by government.

<sup>34</sup> The corrections include the rules and agencies introduced in the Glass-Steagall Act, the Owners' Refinancing Act, the National Industrial Recovery Act, the National Labor Relations Act, and the Social Security Act.

apt to scrutinize the apparent defect in Capitalism and pronounce that, contrary to appearances, the defect is a product of some government regulation or legislation. What is needed is more Capitalism, they maintain, not less and it is the government that needs to be reined in, not the market. Thus, it is not obvious that dissatisfaction with the market should lead to more government. Yet this is what happened .

### A Feature of Capitalism

What attribute of decentralized market capitalism may make it a preferred system of allocating resources at times of peace but makes it inferior to state control and direction in times of national crisis such as war? An answer is that the values and mainsprings of Capitalism are not well-matched to a society-wide effort that these wars called for: the World Wars posed collective threats to the nation and they required collective action to repel them (Olson (1965)). Such collective action is subverted by self-interested behavior : while it is in the interest of each individual that all should contribute to thwart the threats, a single individual sees his particular interest is not to pull his weight, but to rely on the sacrifices of others. Such free-riding behavior can be countered by coercive state action of the sort that America adopted in both wars.

The most obvious collective action problem that was addressed by coercion was that posed by the creation of a sufficiently large military: men were conscripted, not induced with monetary payments or other rewards, into the military. Each individual may see his interest to remain a civilian while encouraging others to enlist. Unlike those enlisted in the Civil War, conscripts in the 20<sup>th</sup> century world wars had no opportunity to pay for substitutes or to tender a fee in lieu of enlisting. Many believed it was their patriotic responsibility to serve in the armed forces, but governments were not confident that the number of such individuals would be sufficient for a major



conflict. Some sort of coercion was thought to be necessary.

Similarly, at a time when resources need to be diverted to counter a collective threat and when movements in prices and wages need to contribute to that end, a single firm or a single group of workers may seek a price or a wage change for itself and yet urge others to maintain prices and wages unchanged. Controls requiring that any price or wage changes require state approval may help in containing self-interested price or wage movements.

In both World Wars, the typical civilian worker enjoyed rising money and real hourly earnings and, with low unemployment, a range of employment opportunities. Earnings inequality fell so the status of low wage workers rose relative to those with high wages. It is difficult to determine how much of this was due to the policies of the War Labor Boards and how much to the effects of an expanding economy. Recent decades show that economic growth and expansion are by no means always accompanied by decreasing earnings inequality so that the case for an independent role for government agencies narrowing earnings differentials during these wars is quite plausible.

Table 1 : Annual Production, Employment, Armed Forces, Hours, and Unemployment , 1913-1923

year	Production Index	Civilian Employment	Armed Forces	Weekly Hours of Work	Unemployment Rate
	1909 = 100	millions	thousands		per cent
1913	111.7	37.00	157	50.9	4.3
1914	104.3	36.28	163	50.1	7.9
1915	126.2	36.22	174	50.4	8.5
1916	147.3	38.01	181	51.4	5.1
1917	160.8	38.18	719	51.0	4.6
1918	157.3	38.54	2,904	49.6	1.4
1919	164.0	39.15	1,543	46.1	1.4
1920	162.2	39.21	380	48.1	5.2
1921	125.3	37.06	362	45.3	11.7
1922	165.8	39.64	276	47.9	6.7
1923	190.6	42.40	255	48.9	2.4

Index of Industrial Production : Miron & Romer (1990)

Civilian Employment (aged  $\geq$  14 years): Lebergott (1964, Table A-3, p. 512)

Armed Forces : Lebergott (1964, Table A-3, p. 512)

Average Weekly Hours of Work (of Production Workers in Manufacturing): Jones (1963)

Unemployment Rate (number unemployed as a percent of the civilian labor force): Lebergott (1964) Table A-3, p. 512 )

Table 2 : Annual Prices, Wages, Trade Union Membership, and Strikes, 1913-1923

year	Nominal Hourly Compensation	Real Hourly Compensation	Consumer Price Index	Trade Union Membership		number of strikes
	\$	1982-84 \$s	(1982-84 = 100)	millions	per cent	
1913	0.197	2.05	9.60	2.716	11.9	-
1914	0.199	2.06	9.69	2.687	12.0	1,204
1915	0.200	2.05	9.74	2.583	11.5	1,593
1916	0.237	2.23	10.64	2.773	11.2	3,789
1917	0.285	2.22	12.82	3.061	12.0	4,450
1918	0.358	2.38	15.06	3.467	13.5	3,353
1919	0.431	2.49	17.30	4.125	16.0	3,630
1920	0.539	2.69	20.04	5.048	19.5	3,411
1921	0.483	2.70	17.90	4.781	19.6	2,385
1922	0.444	2.65	16.77	4.027	15.6	1,112
1923	0.481	2.82	17.07	3.622	12.8	1,553

Average Nominal Hourly Compensation and Average Real Hourly Compensation (in 1982-84 dollars) of Production Workers in Manufacturing: Officer (2009) Table7.1, pp. 166-67 and Table 7.2 p.170

Consumer Price Index : Officer (2007)

Trade Union Membership in millions and as a per cent of nonagricultural employment : Troy (1965), Tables 1 and 2, p.1 and 2

- The number of strikes beginning in year was not collected in 1913. See Peterson (1937, p.35)

Table 3: Annual Production, Employment, Armed Forces, Hours, and Unemployment , 1937-50

year	Production Index	Civilian Employment	Armed Forces	Weekly Hours of Work	Unemployment Rate
	2012=100	millions	thousands		per cent
1937	8.1	46.07	320	37.9	14.3
1938	6.4	44.14	340	35.0	19.1
1939	7.8	45.74	370	37.3	17.2
1940	9.1	47.52	540	37.6	14.6
1941	11.4	50.35	1,620	40.0	9.9
1942	13.1	53.75	3,970	42.3	4.7
1943	15.9	54.47	9,020	44.1	1.9
1944	17.1	53.96	11,410	44.2	1.2
1945	14.7	52.82	11,430	42.4	1.9
1946	12.7	55.25	3,450	39.2	3.9
1947	14.3	57.81	1,590	39.2	3.9
1948	14.9	59.12	1,456	38.8	3.8
1949	14.0	58.42	1,616	38.0	5.9
1950	16.3	59.75	1,650	38.7	5.3

Index of Industrial Production: Federal Reserve Board

Civilian Employment (aged  $\geq$  14 years): Lebergott (1964, Table A-3, p. 512)

Armed Forces : Lebergott (1964, Table A-3, p. 512)

Average Weekly Hours of Work (of Production Workers in Manufacturing): Jones (1963)

Unemployment Rate (number unemployed as a percent of the civilian labor force): Lebergott (1964, Table A-3, p.512)

Table 4 : Trade Union Membership and Strikes, 1937-1950

year	Trade Union Membership		number of strikes beginning in year
	millions	per cent	
1937	5.780	17.9	4,740
1938	6.081	20.0	2,772
1939	6.556	20.7	2,613
1940	7.282	21.8	2,508
1941	8.698	23.0	4,288
1942	10.200	24.5	2,968
1943	11.812	26.8	3,752
1944	12.628	29.0	4,956
1945	12.562	29.9	4,750
1946	13.263	30.4	4,985
1947	14.595	31.8	3,603
1948	15.020	31.9	3,419
1949	14.695	31.9	3,606
1950	14.823	31.2	4,843

Trade Union Membership in millions and as a per cent of non-agricultural employment : Troy (1965), Tables 1 and 2, p.1 and 2 ;

Observations on strikes beginning in the year are from annual BLS publications. See notes to Table 6.

Table 5 : Nominal &amp; Real Hourly Compensation, Consumer Prices, Earnings Inequality 1937-1950

year	Nominal Hourly	Real Hourly	Consumer Price	Earnings Inequality	
	Compensation	Compensation	Index	Gini's	% share received
	\$	1982-84 \$s	(1982-84 = 100)	Coefficient	by bottom 90 %
1937	0.63	4.39	14.36	0.435	56.0
1938	0.64	4.54	14.09	0.442	56.3
1939	0.64	4.61	13.89	0.4333	54.4
1940	0.67	4.78	14.03	0.433	54.3
1941	0.74	5.02	14.73	0.434	56.1
1942	0.86	5.28	16.30	0.430	60.5
1943	0.98	5.66	17.30	0.411	64.0
1944	1.05	5.97	17.60	0.393	64.0
1945	1.06	5.89	18.00	0.398	66.2
1946	1.13	5.78	19.54	0.397	65.8
1947	1.30	5.69	22.34	0.386	65.6
1948	1.41	5.86	24.08	0.379	63.5
1949	1.46	6.12	23.85	0.382	63.8
1950	1.55	6.44	24.08	0.379	63.8

Average Nominal Hourly Compensation of Production Workers in Manufacturing: Officer (2009) Table 7.1, pp. 166-67 ; Average Real Hourly Compensation in 1982-84 dollars of Production Workers in Manufacturing: Officer (2009) Table 7.2, p. 170 ; Consumer Price Index : Officer (2007); Trade Union Membership in millions and as a per cent of nonagricultural employment : Troy (1965), Tables 1 and 2, p.1 and 2 . For earnings inequality, see the notes to Table 6 .

Table 6 : Growth in Earnings, Earnings Inequality, and Duration of Strikes before, during, and after the National War Labor Board in the Second World War

years	1		2		3		
	% compound annual growth of hourly compensation		Earnings Inequality		duration of strikes ending in year		
	nominal	real	Gini	% share received by bottom 90 %	% lasting < 1 week	% lasting ≥ 1 month	average duration in days
1937-41	3.27	2.54	0.435	55.4	38.0	21.3	21.2
1942-45	5.37	2.72	0.408	63.7	67.4	4.9	8.1
1946-50	6.53	2.18	0.385	64.5	39.8	22.5	22.7

1. Percentage Compound Annual Growth Rates of the nominal and real hourly compensation of production workers in manufacturing : Officer (2009) Tables 7.1 and 7.2, pp. 166-67 & p.170
2. Earnings Inequality: the values of Gini's coefficient of annual earnings inequality averaged over the years indicated (Kopeczuk, Saez, and Song (2010) ); the share of post-tax Income received by the bottom 90% of earners averaged over the years indicated ( Piketty, Saez, and Zucman (2018) )
3. Information drawn from the following Department of Labor publications: for strikes in the year 1936, *Monthly Labor Review* May 1937; for 1937, *Monthly Labor Review* May 1938; for 1938, *Monthly Labor Review* May 1939; for 1939, *Monthly Labor Review* May 1940 ; for strikes in 1940, *Monthly Labor Review* May 1941 ; for strikes in 1941, *BLS Bulletin No. 711* (May 1942); for 1942 *BLS Bulletin No. 741* (May 1943); for 1943, *Monthly Labor Review* May 1944 ; for 1944, *BLS Bulletin No. 833* (May 1945) ; for 1945, *BLS Bulletin No. 878* (May 1946) ; for 1946, *BLS Bulletin No. 918* (June 1947) ; for 1947, *BLS Bulletin No. 935* (April 1948) ; for 1948, *BLS Bulletin No. 963* (April 1949) ; for 1949, *BLS Bulletin No. 1003* (June 1950) ; for 1950, *BLS Bulletin No. 1035* (July 1951).

Table 7 : Percentage of All Strikes Ending in Year that were undertaken by Unions affiliated with the AFL and CIO and by Independent Unions or Unaffiliated Unions, 1937-1950

years	affiliated with AFL & CIO	Independent and Unaffiliated
1937-41	87.3	8.6
1942-45	59.6	18.9
1946-50	79.8	17.7

There is a third category of strikes consisting of those where the affiliation of the union involved was not reported, a few strikes in company unions, and strikes conducted by independent railroad brotherhoods.



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