

# *Secular Trends, Long Waves, and the Cost of the State*

## **Evidence from the Long-Term Movement of the Profit Rate in the U.S. Economy**

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*Minqi Li & Adam Hanieh*

Theorists in the tradition of either Classical Marxism or Keynesianism understand that as capitalism provides an historical space for the development of material forces of production, its economic and social contradictions tend to develop, requiring progressively more complex institutional structures and increasingly higher degrees of state intervention.

Since the 1970's, many in the Marxist tradition have studied the relationship between long waves and changes in capitalist institutions. A common theme of the literature is that the resolution of major crises of accumulation has historically required the construction and consolidation of new capitalist institutions with changing roles for the state (among others, see Aglietta, 1979; Mandel, 1983; Lipietz, 1987; Itoh, 1988; Dumenil & Levy, 1993; Arrighi, 1994; Arrighi & Silver, 1999; Dumenil & Levy, 2001).

The "social structures of accumulation" (SSA) school has led in the study of long waves and institutional changes in the U.S. context. According to the SSA school, the U.S. economy has passed through three social structures of accumulation over the past 150 years. In the past, the direction of institutional changes has been towards a more interventionist state. However, the neoliberal era has been characterized by attempts to reverse the previous historical trend (Gordon, Edwards & Reich, 1982; Kotz, 1987; 2001; Bowles & Edwards, 1993).

Immanuel Wallerstein, the leading world-systems theorist, argues that states in the modern world-system have been under growing pressure from workers as well as capitalists to deliver increas-

ingly more expensive services, and the inherent contradictions of the system have led to secular tendencies of rising taxation costs as well as rising wage and environmental costs. As these secular trends approach their asymptotic limits, the existing world-system is confronted with an insoluble structural crisis.

These theoretical propositions raise important empirical questions: as the state plays changing and increasingly important roles in capitalist development, has the financing of state activities (taxation costs) become increasingly expensive? Has the rise of taxation costs led to the fall of the profit rate? What have been the effects of the neoliberal regime on taxation costs and the profit rate? What could be the long-term implications for the existing social system if the secular trend of rising taxation costs cannot be reversed?

In this article we present a new measurement of the profit rate in the U.S. economy for the period 1869–2000 that takes into account the movement of taxation costs. The results allow us to have some new understanding of the secular trends and long waves of capitalist development. The article begins with an examination of alternative theoretical approaches on the historical trends of capitalism and the changing role of the state: Marx and Engels, Keynes, the SSA school, and Wallerstein.

It then moves to examine the profit rate in the U.S. economy over the period 1869–2000. We find that the profit rate had tended to fall over the long period from the 1870's to the 1980's, followed by a small reversal in the neoliberal era. Rising taxation costs had played a major role in the fall of the profit rate. We are able to identify four long waves in the movement of the profit rate. Currently we are probably near the peak of the fourth (neoliberal) long wave.

## SECULAR TRENDS, LONG WAVES, AND THE CHANGING ROLE OF THE STATE: MARX, ENGELS, KEYNES, THE SSA SCHOOL, AND WALLERSTEIN

### *Classical Marxism*

A central and particularly insightful argument of Classical Marxism is that all social systems are historical in the sense that they emerge and develop under certain historical conditions. As the underlying historical conditions tend to change, the existing social

system enters a period of crisis that is eventually resolved by the formation of a new social system.

For Marx and Engels the dynamic interactions between the underlying historical conditions and the prevailing social system are driven by the contradiction between the material forces of production and the social relations of production. Particular social relations of production dominate during certain historical periods because they can broadly accommodate the development of productive forces. Over time, however, as the forces of production tend to develop, the existing social relations of production become increasingly obstacles to this development, and are eventually replaced by a new set of social relations (Marx, 1958).

Capitalism, as a historically specific social system, is not an exception. But how exactly does the contradiction tend to develop under capitalist conditions? In *Capital*, volume III, Marx advanced the famous hypothesis "the law of the tendency for the rate of profit to fall." According to Marx, the development of productive forces under capitalism tends to be accompanied by the substitution of living labor by dead labor (that is, a rising capital-output ratio). Since surplus value (the capitalist profit) is produced by living labor, this falling ratio leads to the fall of the profit rate. For Marx, the tendency for the rate of profit to fall in the long run would undermine the vitality of capital accumulation and deprive capitalism of its historical justification.

The validity of the hypothesis of falling rate of profit has been intensely debated among Marxist economists. The available empirical evidence suggests that the hypothesis of rising capital-output ratio has been largely consistent with the long-term historical experience of advanced capitalist economies. Foley and Marquetti's study (2003) of 126 countries over the period of 1959–90 finds that capitalist economic development has been characterized by strong negative correlations between output-capital ratio and labor productivity (implying that capital-output ratio tends to rise). However, the U.S. experience since the late nineteenth century has been a major exception. Over the past century, the U.S. capital-output ratio has experienced some major upward and downward movements that have largely offset each other. Table 1 presents the long-term movement of capital-output ratios in some advanced capitalist countries.

**Table 1**  
 Long-Term Movement of Capital-Output Ratios in  
 Advanced Capitalist Economies

(The ratio of gross nonresidential capital stock to gross domestic product)

Year	U.S.	France	Germany	Netherlands	U.K.	Japan
1820	0.95	n.a.	n.a.	n.a.	0.68	n.a.
1890	3.05	n.a.	n.a.	n.a.	0.83	0.71
1913	3.30	n.a.	n.a.	n.a.	0.84	0.89
1950	2.45	1.63	1.81	2.06	0.81	1.77
1973	2.12	1.55	1.94	1.97	1.32	1.74
1992	2.43	2.26	2.33	2.31	1.82	3.02

Source: Maddison, 1995: 36.

In *Socialism: Utopian and Scientific*, Engels characterized the basic contradiction of capitalism as one between the increasing socialization of the “means of production and production itself” and “a form of appropriation which presupposes the private production of individuals” (1958: 139–40). The contradiction, first of all, finds expression in the conflict between the two antagonistic classes, the proletariat and the bourgeoisie. In *The Communist Manifesto*, Marx and Engels believed that “the advance of industry” would create increasingly favorable conditions for the development and organization of the working class, undermining “the very foundation” on which the bourgeoisie produces and appropriates products (2004).

Secondly, the contradiction finds expression in the conflict between the organized, planned production within capitalist firms and the general conditions of “anarchy of production” prevailing in the capitalist economy as a whole. The conflict results in increasingly more violent crises of over-production, forcing capitalism to adopt new forms of organization that are of increasingly higher degrees of “socialization.” These include stock-holding companies and monopolistic organizations, such as cartels and trusts. Engels believed that “the official representative of capitalist society—the state—will ultimately have to undertake the direction of production” (1958: 147), preparing the material and institutional conditions for the future socialist transition.

*Keynes*

For Keynes and the contemporary economists who follow Keynes' tradition (mainly post-Keynesians), a free market capitalist economy with a small government is fundamentally unstable, prone to frequent and violent crises with severe social consequences.

As capitalism develops, investment in expensive, long-lasting fixed capital assets tends to grow in importance. Keynes argues that investment in fixed capital suffers from fundamental uncertainty and the prospective yields on fixed capital in the future cannot be meaningfully calculated in rational manners. As a result, the size and structure of investment largely depend on individual investors' psychological conditions, what Keynes called "the animal spirits." As investment becomes a growing part of the output, the capitalist economy tends to become increasingly unstable, subject to sudden and violent fluctuations.

In Keynes' opinion, the development of organized capital markets is more likely to be under the influence of speculation than direct investment into socially useful channels. As a growing proportion of the society's capital is owned by people, "who do not manage and have no special knowledge of the circumstances, either actual or prospective, of the business in question," the average investors are further detached from any real understanding of business conditions (Keynes, 1964: 153-59).

Keynes' prescription was for the state to play a major role in stabilizing a capitalist economy, through "somewhat comprehensive socialization of investment" (1964: 378). The state must take a "position to calculate the marginal efficiency of capital goods on long view and on the basis of the general social advantage, taking an ever greater responsibility for directly organizing investment" (1964: 164).

Theorists following Keynes' tradition have continued to emphasize the importance of the state as a regulator of capitalist contradictions. Hyman Minsky, for example, sees financial instability as arising from the internal operations of capitalism itself. A long period of stability and rising prosperity, Minsky claims, "breeds a view in ordinary business corporations and financial institutions which allows them to raise their short-term payment commitments as a ratio . . . to their expected cash flows from operations" (Minsky, 1982: 186-87). This profit-seeking behavior leads to higher debt-

income ratios and more fragile financial structures. Minsky argues that comprehensive government regulations of the financial system and a sufficiently large government sector (comparable in size to private investment) are essential conditions for the normal operations of modern capitalist economy (1982; 1986).

### *Long Waves and Social Structures of Accumulation*

The “social structures of accumulation” (SSA) school has led in the study of long waves and stages of capitalist development in the U.S. context. According to the SSA school, at each stage of capitalist development, a certain set of political, economic, and social institutions forms a social structure of accumulation. As long as the existing SSA provides a favorable environment for capital accumulation by ensuring relatively high and stable profit rates, the capitalist economy tends to expand vigorously. However, over time, due to changing economic and social conditions as well as contradictions within the existing SSA, the profit rate tends to decline, undermining accumulation, and eroding the existing SSA, resulting in “a period of decay” characterized by economic stagnation or contraction, and intensified social conflicts. During the period of decay, the social groups and political forces defending the declining SSA tend to be weakened, and various classes and social groups will fight for the direction of institutional change until a new SSA emerges (Gordon et al., 1982; Kotz, 1987; Bowles & Edwards, 1993: 120–24, 440–73).

According to the SSA school, the U.S. economy has passed through three social structures of accumulation (long waves) over the past 150 years. The first, competitive capitalist SSA lasted from the 1840’s to the 1890’s. The second, private monopoly capitalist SSA lasted from the turn of the nineteenth century to the 1930’s. The post-Second World War SSA started in the 1940’s and its expansionary stage ended in the mid-1970’s. There has been debate within the SSA school concerning whether the neoliberal stage of capitalism constitutes an independent SSA.

Kotz notes that in each previous SSA the direction of institutional reconfiguration has been towards a more interventionist state (2001). In the neoliberal era, however, increased global interdependence has limited the ability of individual states to regulate capital. While a new SSA requires a state that can intervene in the

capitalist economy in new and more effective ways, the neoliberal policies run counter to the requirement for developing a regulationist state. As a result, a new SSA has failed to emerge and economic stagnation and instability has continued.

In a later article, Kotz argues that the historical pattern of long-run capital accumulation can be better understood as based on successive institutional structures that may or may not be social structures of accumulation (that is, they may or may not promote capital accumulation) (2004). Inspired by Karl Polanyi, he suggests that U.S. capitalism has alternated between liberal institutional structures and regulationist institutional structures, with the excesses and contradictions of each phase setting the stage for transition to the next, opposite phase.

Over the past century, U.S. capitalism has experienced two regulationist institutional structures and two liberal institutional structures. The progressive era regulationist institutional structure lasted from 1900–16; the post-First World War liberal institutional structure lasted from 1920–32; the post-Second World War regulationist institutional structure lasted from 1947–73; and the neoliberal institutional structure started in 1980.

Kotz's reconceptualization of capitalist institutional evolution raises the interesting question whether capitalism will swing back towards some form of regulationist institutional structure as the contradictions of neoliberalism develop.

### *Wallerstein's World-Systems Approach*

Immanuel Wallerstein and other world-systems analysts have followed the Classical Marxist tradition, seeing capitalism as an historical system. According to Wallerstein, the internal contradictions of the system find expressions in cyclical rhythms as well as secular trends. The cyclical rhythms serve to contain the contradictions and preserve the basic structure of the system. These movements, however, produce "small, structural shifts" which in turn generate secular trends that shift the structural parameters of the system itself (Wallerstein, 1997). Eventually, the system is no longer able to contain the pressure of the secular trends and enters a period of transition that will lead to its eventual demise.

Capitalism as a system is premised upon the endless accumulation of capital. Three secular trends arise as a result of the drive

towards endless accumulation. First, Wallerstein believes that there is a secular tendency towards the worldwide increase in the bargaining power of workers and a consequent increase in the global wage bill for capital. He argues that workers tend to organize themselves and gain greater political strength over time, leading to higher levels of real wages as a percentage of costs of production. Capital responds to this by relocating to other areas of the globe where workers are less organized and wages are lower. But sooner or later the workers in the low-wage areas also start to organize and exert pressures on wage levels. Eventually the global expansion of capital will exhaust all possible sites of relocation, leading to the first of what Wallerstein terms "asymptotes" that signals the terminal crisis of the system (Wallerstein, 1998: 35–41).

The second limiting asymptote is the increase in the tax bill for capitalists. According to Wallerstein, there are two forces pushing for expansion of state activities. The first is the pressure from capital itself for increasing state intervention to promote capital accumulation and protect capitalist property relations, and the second is the pressure from popular demands for greater provisions of social welfare. The expansion of these provisions has been necessary to ensure political stability and to tame the "dangerous classes" (Wallerstein, 1998: 43). However, the increase in state activities has to be financed by higher tax revenue, which erodes profitability. Therefore, in the long run the second asymptote is reached when demands for increased state services interfere seriously with the possibility of accumulating capital.

The third limiting asymptote identified by Wallerstein is the "exhaustion of the conditions of survival" (1998: 44) that results from damage to the earth's biosphere. Until very recently, capitalism has been able to "externalize" the environmental costs generated by the drive towards endless accumulation. What this represents, according to Wallerstein, is the shifting of "costs from the producer to the state or 'society' at large, thereby significantly increasing the rate of profit of the producer" (1998: 45). However, the biosphere has now deteriorated to such a point that the very survival of humanity is at stake. The environmental costs thus can no longer be easily externalized and capital must either pay for them directly through reduced profits, or indirectly through the tax bill (1998: 45).



Following from these asymptotic limits, Wallerstein identifies a growing and unsustainable contradiction in the role of the state. On the one hand, capital needs the state more than ever before, as a provider of ever more complex services and to deal with growing environmental problems. On the other hand, the necessary increase in taxes that results from this demand leads to profit squeeze on capital itself. The inability of the state to meet the system's requirements intensifies the malfunctioning of the system and undermines the legitimacy of the state itself. The vicious circle heralds the structural crisis of the existing world-system and Wallerstein argues that we are in the transition from the current world-system to one or several other systems (Wallerstein, 1998: 48).

Each of the theoretical traditions discussed above points to the increasing importance of the state as an historical tendency of capitalist development. The Marxist approach sees this as a necessary corollary of the contradiction between the increasing socialization of the productive forces and the capitalist relations of production. The Keynesian approach sees the state playing a crucial role in stabilizing the capitalist economy as investment in fixed capital becomes more important. The SSA literature identifies a tendency towards growing state intervention (up to the rise of neoliberalism) from the institutional evolution of U.S. capitalism. Wallerstein points out that over time the state in the existing world-system has been under growing pressure from both capital and the general population to provide increasingly comprehensive services. To the extent that growing state activities have to be financed, the costs of taxation are likely to become a growing burden on capital accumulation.

These are important theoretical propositions that need to be evaluated in the light of empirical evidence. The next section of this article attempts to address the question by examining the long-term movement of the profit rate and its determinants in the U.S. economy from 1869–2000.

#### LONG-TERM MOVEMENT OF THE PROFIT RATE AND ITS DETERMINANTS (THE U.S. ECONOMY, 1869–2000)

Marxists have always emphasized the profit rate as a key concept in political economy. The capitalist system is based on produc-

tion for profit. The profit rate is the central indicator that motivates capital accumulation. Since the 1970's, many have studied the movement of the profit rate and its determinants (such as the profit share or the rate of surplus value, the capital-output ratio or the organic composition of capital) in advanced capitalist countries during the post-Second World War period (among others, see Gordon, Weisskopf & Bowles, 1987; Armstrong, Glyn & Harrison, 1991; Moseley, 1991; 1997; Shaikh & Tonak, 1994; Brenner, 1998; Shaikh, 1999). However, there have been few studies of the movement of the profit rate and the profit share over longer periods.

Dumenil and Levy advanced a pioneering study of the long-term movement of the rate of profit, the profit share, and capital productivity in the U.S. private economy (1993; 2001; 2002). They find that during two historical phases, from the Civil War to the beginning of the twentieth century, and from the 1940's to the 1970's, technical change had led to falling capital productivity (that is, rising capital-output ratio) and falling rate of profit (what Dumenil and Levy refer to as technical change "à la Marx"), resulting in "structural crisis." However, in response to the crisis, capitalism underwent institutional changes that brought about "managerial revolution" and restored the profit rate more or less to previous levels. Dumenil and Levy also find that in the long run, the profit share and the wage share of output have been essentially constant.

Dumenil and Levy's study uses a broad measure of profit that does not take into account the effect of taxation costs. The approach can be justified if one is interested in how national output is broadly distributed between the working class and the capitalist class (private capitalists and the capitalist state). But the approach would seem to be inadequate if one is interested in the actual rate of return on capital for private capitalists and the actual portion of output that is potentially available for capital accumulation. From private capitalists' point of view, wages as well as taxes are "costs" that have to be subtracted from the revenue before a profit can be made, even though both types of "costs" occur to provide essential conditions for capitalist activities.

The rate of profit is the ratio of the profit to the stock of capital. The rate of profit can be written as the product of its two determinants: the profit share and the output-capital ratio:

$$\text{Rate of Profit} = P/K = (P/Y) * (Y/K)$$

Where  $P$  = profit,  $Y$  = output,  $K$  = Capital Stock.

We measure the output by the net domestic product and the capital stock by the net stock of private nonresidential fixed assets. We define the profit as the difference between output and the sum of wage and taxation costs. The wage costs include compensation of employees and an estimated wage component of the proprietors' income. The taxation costs are the sum of indirect taxes (less subsidies) and corporate income tax. All variables are measured in current dollars. Detailed discussions of data source and construction are presented in the appendix.<sup>1</sup>

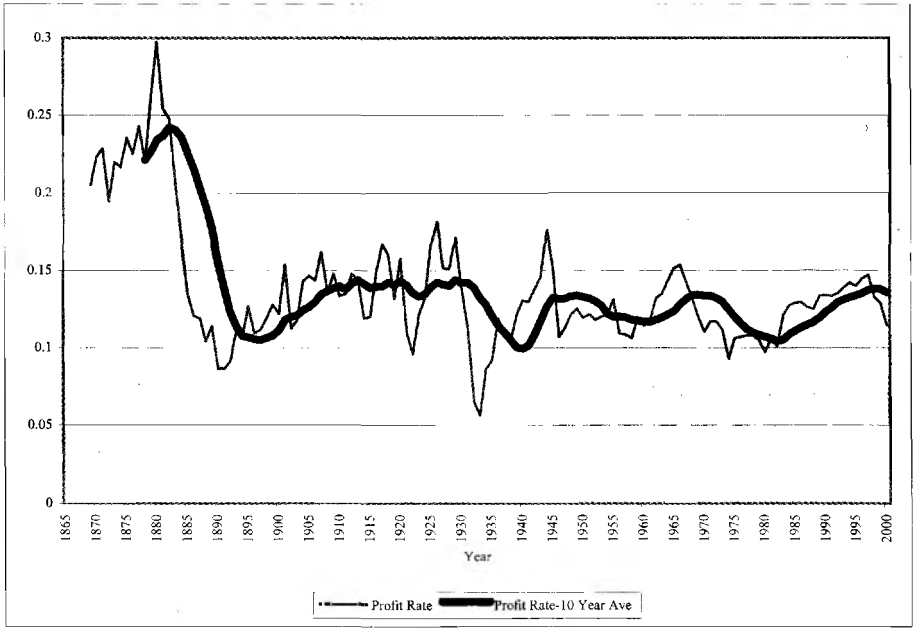
Figure 1 shows the profit rates and their ten-year moving averages for the U.S. economy from 1869–2000.<sup>2</sup> One can identify four long waves in the movement of the profit rate. If a long wave can be defined as from one trough point of ten-year moving averages to the next, then the first long wave started from some years before 1869, reaching a peak around 1882, and bottomed in 1897. The second long wave started around the turn of century, rising to a high plateau between 1913–29, crashed during the Great Depression and bottomed in 1940. The third long wave started in the 1940's. The boom during the Second World War was followed by the "golden age" from 1945 to 1973, with a peak around 1966–68. The profit rate drifted down during the 1970's and bottomed in 1982. The period of 1869–97 probably included about three quarters of a long wave, or 28 years. The second long wave lasted 43 years and the third long wave lasted 42 years. The fourth long wave started in the mid-1980's and might have reached the beginning of a high plateau by the late 1990's.

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<sup>1</sup> The profit as measured in this article should not be confused with the Marxist concept of "surplus value," which can be measured by the difference between the net value of output and the wages of production workers (Moseley, 1991; Shaikh & Tonak, 1994). For the same reason, the profit share as measured in this article should not be seen as reflective of the rate of surplus value. The measure of taxation costs does not include income and wealth taxes on individual capitalists. However, the existing income and wealth tax data do not tell us in what proportion these taxes are distributed between the capitalists and the workers and there is not a technique that helps us to reasonably estimate the proportion. As a result, the measure of taxation costs used in this article understates the actual level of taxation costs and possibly underestimates the extent to which the taxation costs have risen relative to output (considering that income taxes have grown in importance over the past century).

<sup>2</sup> 1869 is the year when many important U.S. national statistics begin to be available. 2000 is chosen as the ending year because it was the last year of the 1990's expansion.

**Figure 1**  
The Profit Rate: U.S. Economy 1869–2000



In terms of periodization, these profit rate long waves correspond closely to the successive “social structures of accumulation” discussed in the SSA literature. The first, second, and third long wave correspond respectively to the competitive capitalist, private monopoly capitalist, and state monopoly capitalist SSA. The decline or the crisis of each of the three long waves coincided with a major institutional restructuring that produced a new SSA. We are now probably near the peak of the fourth, neoliberal long wave. If past history could serve as a guide, the current long wave is likely to enter its decline or crisis stage in the next ten years.

Figure 2 shows the profit shares and their ten-year moving averages for the U.S. economy from 1869–2000. The profit share had clearly tended to fall from the 1870’s to the 1980’s. The ten-year average profit share fell from 28.4% during 1869–78 to 14.1% during 1973–82, or by 50 percent.

**Figure 2**  
The Profit Share: U.S. Economy 1869–2000

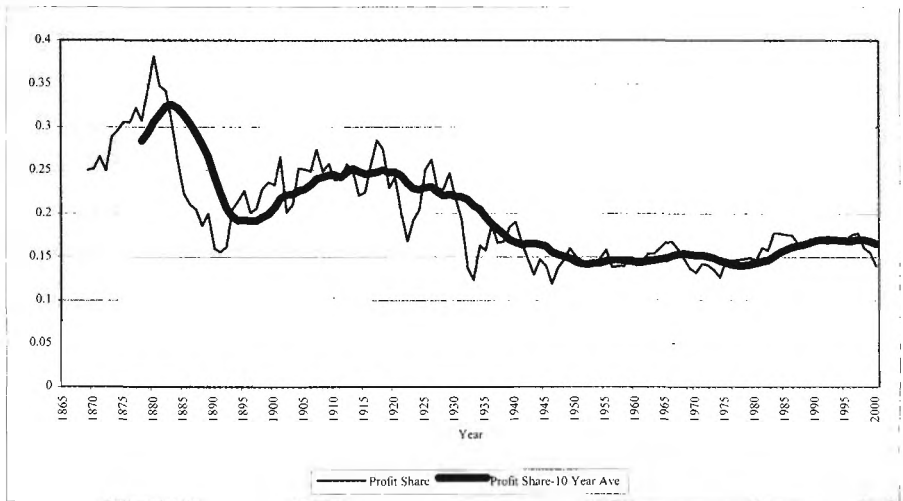


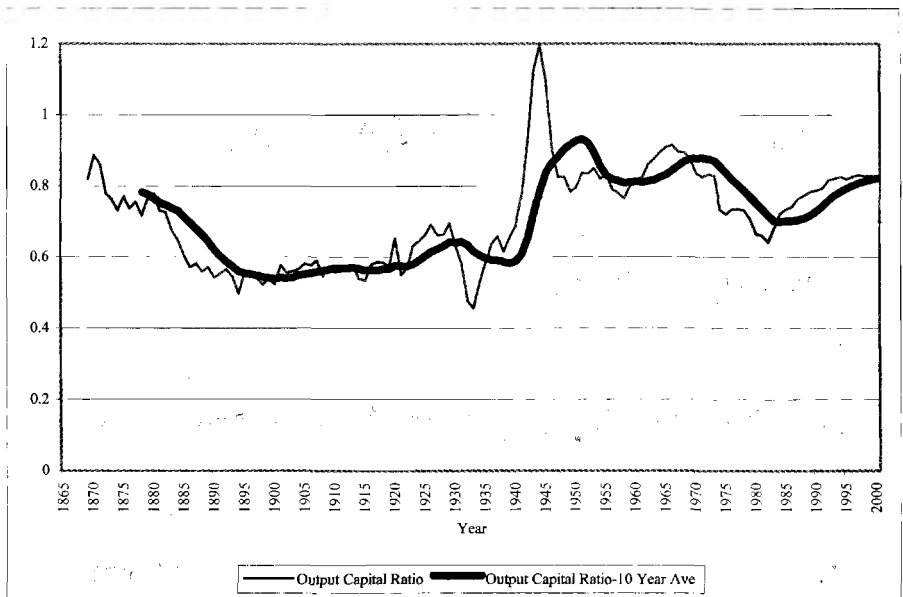
Table 2 reports the average and the peak profit rate and profit share for each of the four long waves. Each long wave is given a name that attempts to capture its institutional features. Both the profit rate and the profit share, measured by either the average for the entire stage (long wave) or by the peak ten-year average, had moved progressively lower from the first, competitive capitalist long wave to the third, state monopoly capitalist long wave. The long-term downward movements of the profit rate and the profit share seem to have been (at least temporarily) stopped and reversed during the neoliberal capitalist long wave. Both the profit rate and the profit share in the neoliberal era have risen above the levels found during the state monopoly capitalist long wave. Overall, during the post-Second World War period, both the profit rate and the profit share had stayed at levels significantly below those during the first three decades of the twentieth century and considerably below those in the nineteenth century.

Figure 3 shows the output-private capital ratios and their ten-year moving averages, a measure related to the organic composition of capital. During the period 1869–2000, the output-capital ratio exhibited some major movements over certain periods but had essentially moved around a slightly upward trend. Therefore, the long-term decline of the profit rate is entirely accounted for by the decline of the profit share.

**Table 2**  
The Profit Rate, the Profit Share, and Long Waves

Stage / Long Wave	Average for the phase		Peak 10-year average (Peak year)	
	Profit Rate	Profit Share	Profit Rate	Profit Share
Competitive Capitalism (1869-97)	17.5%	25.4%	24.2% (1882)	32.6% (1883)
Monopoly Capitalism (1898-1940)	13.0% (14.0%)*	22.0% (23.8%)*	14.4% (1913, 1929)	25.2% (1913)
State Monopoly Capitalism (1941-82)	11.9%	14.3%	13.1% (1949, 1968)	16.1% (1943)
Neoliberal Capitalism (1983-2000)	12.7%	16.3%	13.2% (1998)	16.6% (1998)

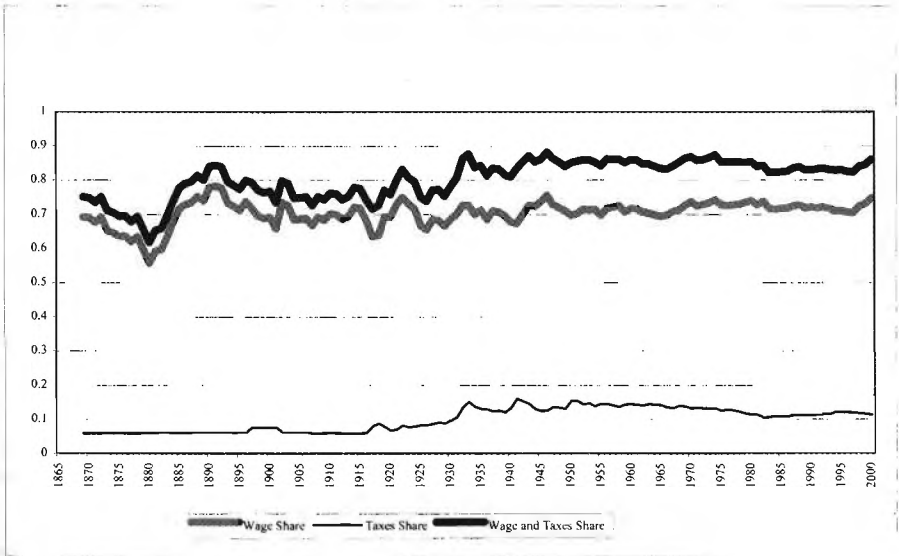
**Figure 3**  
The Output-Capital Ratio: U.S. Economy 1869-2000



What had contributed to the decline of the profit share and the profit rate?

Figure 4 compares the wage costs, the taxation costs, and the sum of wage and taxation costs as share of output. Table 3 reports the average levels of wage costs, taxation costs, and their sum as share of output. Between the first and the third long wave, both the wage costs and the taxation costs had tended to increase as share of output. However, taxation costs clearly had accounted for the greater part of the increase in the total costs. Between the first and the third long wave, while the share of wage costs had increased by 3.4 percentage points, the share of taxation costs had increased by 7.8 percentage points, more than double the increase of the wage costs. In the neoliberal era, the share of taxation costs fell by about 2 percentage points compared to the previous long wave. Despite this reversal, both the wages costs and the taxation costs as share of output have stayed at relatively high levels.

**Figure 4**  
Wage Costs and Taxation Costs: U.S. Economy 1869–2000



The long wave studies have traditionally used the growth rate of real economic output as a major indicator of periodization.

**Table 3**  
Wage Costs, Taxation Costs, and Long Waves

Stage /Long Wave	Wage costs / output	Taxation costs / output	Sum of wage and taxation share
Competitive Capitalism (1869-97)	68.5%	6.1%	74.6%
Monopoly Capitalism (1898-1940)	69.4%	8.6%	78.0%
State Monopoly Capitalism (1941-82)	71.9%	13.9%	85.7%
Neoliberal Capitalism (1983-2000)	71.9%	11.8%	83.7%

Source: U.S. Department of Commerce 1975, various tables; BEA 2004, various tables.

Figure 5 compares the profit rates and their ten-year moving averages (for the U.S. economy, 1869-2000) with the growth rates of real Gross Domestic Product (GDP) and their ten-year moving averages (for the U.S. economy, 1871-2000).<sup>3</sup> The growth rates fluctuate strongly from year to year and their long-term cyclical movements are not as pronounced as those for the profit rates. Nevertheless, some significant trough years can be identified: 1894, 1917, 1933, 1954, and 1983. Each growth rate long cycle (measured from one trough year to the next) lasts between 15-30 years. Each profit rate long wave encompasses approximately two growth rate long cycles.

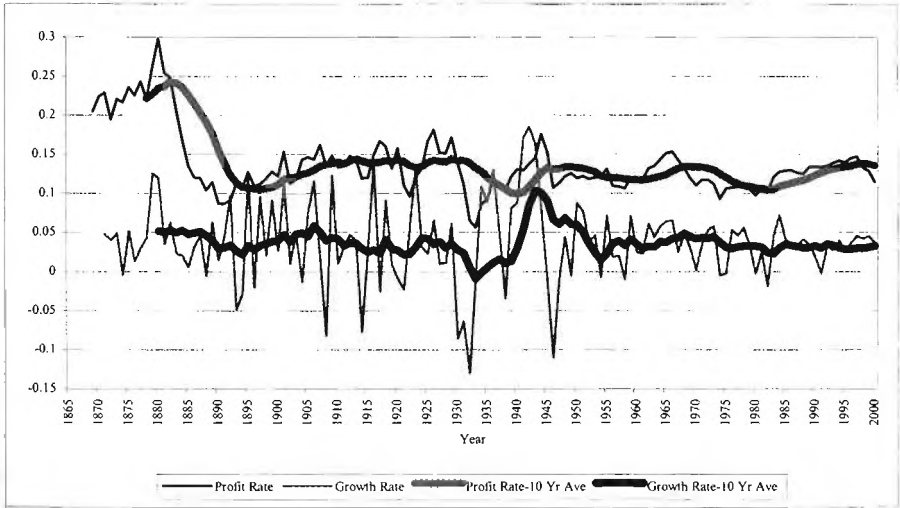
Table 4 reports the growth performance of the four profit-rate long waves. For the second, third, and fourth long waves, the average growth rates are calculated in two different ways, first over the profit-rate long wave itself, and secondly, over a period that corrects for the effect of war, depression, or major recession. The growth performance of neoliberal capitalism is significantly worse

<sup>3</sup> The growth rate data for 1930-2000 are from the U.S. Bureau of Economic Analysis (2005: table 1.1.1) and for 1871-1929 are from Maddison (1995:182 table C-16a).



than that of competitive capitalism or state monopoly capitalism, and is roughly comparable to that of monopoly capitalism if either the Great Depression is excluded from the monopoly capitalist long wave or the 1980–82 recession is included in the neoliberal long wave.

**Figure 5**  
 The Profit Rate and Growth Rate:  
 U.S. Economy 1869–2000/1871–2000



**Table 4**  
 Long Waves and Growth Performance

Stage / Long Wave		Average annual growth rate of real GDP (%)
Competitive Capitalism	1871–97	3.86
Monopoly Capitalism	1898–1940	3.08
	1898–1929	3.59
State Monopoly Capitalism	1941–82	3.92
	1948–79	3.77
Neoliberal Capitalism	1983–2000	3.61
	1979–2000	3.10

Source: U.S. Department of Commerce 1975, various tables; BEA 2004, various tables.

## NEOLIBERALISM AND THE COST OF THE STATE

The state has always played an indispensable role in regulating capitalist class relations and providing favorable conditions for capital accumulation. As the economic and social contradictions of capitalism tend to grow, its successful operation has required progressively higher degrees of state intervention.

However, to finance the increasingly more extensive state activities, the state has to impose greater taxation costs on the capitalist economy. Higher taxation costs, as well as higher wage costs, have eroded profitability and become a growing threat to the viability of the capitalist system itself.

In this article, we present a new measurement of the profit rate and its determinants in the U.S. economy over the period 1869–2000 that takes into account the effect of taxation costs. We find that four long waves in the movement of the profit rate can be identified, each lasting about 40 years. Both the profit rate and the profit share had tended to fall from the first to the third long wave and the rising taxation costs had been the primary factor behind the decline of the profit rate and the profit share.

In this context, neoliberalism (as a set of policies and institutions designed to reduce the degrees of state intervention and undermine the bargaining power of the working class by attacking social and economic rights) may be seen as a strategic attempt waged by the ruling elite of the system to reverse the secular trends of rising wage costs and taxation costs and restore the profit share and the profit rate.

Indeed, the fourth, neoliberal long wave has witnessed some decline of the taxation costs relative to output and a partial recovery of the profit rate and the profit share. However, neoliberalism has achieved only limited success in reducing costs and restoring profitability. Compared to earlier historical periods, both the wage costs and the taxation costs have stayed at relatively high levels.

Some interesting questions can be raised. Do the limited decline of the taxation costs and the partial recovery of the profit rate in the neoliberal era represent a fundamental break from the long-term historical trend towards increasing state intervention and higher taxation costs? Or, is the neoliberal era no more than an historical aberration and the long-term historical trend will reassert itself in the post-neoliberal era? Alternatively, Wallerstein suggests

that capitalism has entered into a structural crisis that can no longer be resolved within the framework of the existing world-system. In that case, the neoliberal attack on the state, an institution that has played a crucial role in alleviating capitalist social and economic contradictions, may turn out to be the signal that capitalism has exhausted its historical space of self-adjustment, as its primary means of self-adjustment (growing state intervention) imposes growing costs on the operation of the system.

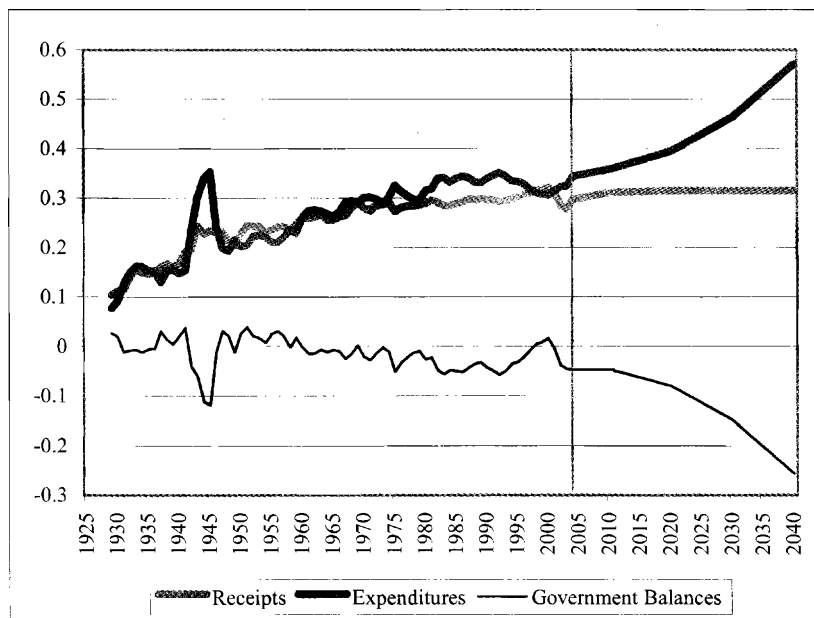
Figure 6 presents the actual and projected U.S. government total receipts, total expenditures, and balances as a share of GDP from 1929 to 2040. Both the receipts and the expenditures had steadily increased from the 1930's to the 1980's. In the neoliberal era, U.S. government expenditures have stayed at between 30–35% of GDP, or historically high levels. Therefore, the neoliberal state continues to face high demands from capital, labor, and other social groups and has largely been unable to reduce the level of spending.

With government spending staying at historically high levels, the neoliberal effort to reduce taxation costs for the capitalists has produced a chronic fiscal crisis. The U.S. government ran large deficits (around 5% of GDP) through the 1980's. Under the Clinton administration, the government balance moved into a small surplus towards the end of the 1990's as the U.S. economy boomed in the stock market bubble. However, after the burst of the bubble, the Bush administration cut taxes to reward big capitalists and prevent the economy from falling into depression. Military and security expenditures increased to finance new imperialist adventures. As a result, the U.S. government balance moved swiftly back to a deficit that rose to near 5% of GDP by 2003. The United States also faces long-term structural fiscal challenges. If the government's current social commitments remain intact (mainly social security and medical care commitments) and taxation levels are not raised, the U.S. government deficit is projected to explode after 2010.<sup>4</sup>

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<sup>4</sup> U.S. government total receipts and expenditures from 1929 to 2003 are from the U.S. Bureau of Economic Analysis (2005: table 3.1, [www.bea.gov](http://www.bea.gov)). The projections of the U.S. federal government receipts and expenditures after 2004 are based on the "do nothing" scenario projected by the U.S. congressional budget office, cited in Peterson (2004: 235–39). The state and local government receipts and expenditures as a share of GDP in the post-2004 years are assumed to be the same as their average in the period 1993–2003.

**Figure 6**  
 U.S. Government Receipts, Expenditures, and Balances as a Share of GDP 1929–2040  
 (actual and projection, all levels of government)



The U.S. government's chronic fiscal crisis suggests that neoliberalism has failed to provide a long-term, sustainable solution to the problem of rising taxation costs. The effort to reduce taxation costs for the capitalists despite high demands on state resources has produced large and rising government deficits in relation to national output, a situation that cannot be sustained in the long run. If the ruling elites respond to the growing fiscal problem by further attacking the working class and greatly reducing state spending, it may greatly undermine the state's legitimacy as well as its ability to alleviate capitalist economic and social contradictions. To the extent that extensive state intervention has become indispensable for the successful operation of modern capitalism, such a strategy may turn out to be self-defeating. Alternatively, if the state raises taxes to meet the rising social demands, the rising taxation costs could impose an unbearable burden on profitability.<sup>5</sup>

<sup>5</sup> For more analysis on the contradictions of neoliberalism and the developing U.S. economic crisis, see Li (2004a; 2004b).

In the coming decades, the existing social system will have to confront the developing global environmental crisis. The endless drive towards capital accumulation on a global scale has imposed increasingly severe burdens on the earth's biosphere and now threatens to produce catastrophic consequences in the not so distant future (SDIS, 1999a; 1999b; Foster, 2002). Any attempt to improve environmental sustainability involves additional costs for the system, so long as it requires some investment or the use of some technology that otherwise would not have been undertaken or developed. The costs may be directly imposed on the capitalists as a result of state regulation or indirectly imposed on the capitalists as a result of higher taxes required to finance government spending on environmental cleaning, investment, and regulation. Given the scope and scale of the current environmental problems, the overall costs could be financially overwhelming.

Our study in this article is limited to the presentation and analysis of empirical data found in the context of U.S. capitalism. As such, it represents a small and limited step in the study of the historical trends of capitalism. More studies using data from other countries and other historical periods will be required to understand the changing role of the state and its effects on the profit rate. However, we have some confidence that some of the trends discussed in this article, such as the long-term tendency of rising taxation costs relative to output, may not be the unique phenomenon of U.S. capitalism. It is a well-established empirical fact that government spending as a share of GDP has increased substantially across advanced capitalist countries since the late nineteenth century and has stayed at historically high levels in the neoliberal era (Baker, Epstein & Pollin, 1998: 16).

If neoliberalism or post-neoliberal capitalism fails to substantially reduce the high level of wage and taxation costs and has to come to terms with the increasingly expensive environmental costs, the system will find itself under enormous and growing pressures. Its very survival will be at stake.

## APPENDIX

### DATA SOURCE AND CONSTRUCTION

#### Calculating the Profit Rate and the Profit Share

The Rate of profit is given by the following equation:

$$P/K = (P/Y) * (Y/K)$$

Where P = profit, Y = output, K = Capital Stock and P/Y represents the profit share, Y/K the output-capital ration.

Profit is further determined using a subtraction method where

$$P = Y - (\text{Wage Costs} + \text{Taxation Costs})$$

Wage Costs = Compensation of employees + Wage component of the proprietors' income

Taxation Costs = Indirect taxes less subsidies + corporate income tax + business transfer to the government

Wage component of the proprietors' income = the proprietors' income - the estimated profit component of the proprietors' income

#### Estimating the Profit Component in the Proprietors' Sector

The proprietors' sector includes simple commodity producers (the self-employed) as well as small capitalist firms. Therefore, the proprietors' income includes labor incomes as well as capitalist profits that are not disaggregated through the national accounting statistics. Wolff assumes that 50% of the proprietors' income as profits but notes that experimentation of the ratio between one-quarter to three-quarter does not alter his results dramatically (1999).

Since capitalist relations of production are based on the employment of wage labor, we assume that the profit component of the proprietors' income is proportional to the compensation of employees in the proprietors' sector. Further, we assume that the ratio of profit to compensation of employees is the same in the proprietors' sector as that in the corporate sector. This results in a much lower share of profit component than what is often assumed (12% for 1997). However, since the proprietor's income has tended to fall as a share of the national output, a higher estimate of the

profit component would have resulted in a stronger trend for the profit share to fall than is presented in this article.

The measurement of P, Y, and K has been undertaken using the following variables:

### **Variables from BEA National Income and Product Account (NIPA) Tables, 2004**

The following variables have been taken from NIPA Tables 2004. The table series number is given followed by the line number in parentheses. The column on the right gives the abbreviation used in the calculations below:

<b>Variable</b>	<b>Relevant NIPA Table</b>	<b>Abbreviation</b>
Net Domestic Product	1.7.5(30)	BEANNP
Net Stock of Private Non-Residential Fixed Assets (current prices)	4.1(1)	BEAK
Total Compensation of Employees	1.12(2)	BEATOTW
Proprietor's Income	1.12(9)	BEAPROPINC
Corporate Profits with IVA and CCA	1.12(13)	BEAP
Indirect Taxes	1.12(19)	BEATAX1
Corporate Income Tax	1.12(14)	BEATAX2
Corporate Business Transfers to Government	1.12(23)	BEATAX3
Compensation of Employees in Proprietorships and Partnerships	1.15(13)*	BEAPROPW
Compensation of Employees in the Corporate Business Sector	1.15 (4)*	BEACORPW

\*NIPA Series, 1997

### **Variables from the Dumenil and Levy Series**

Private Sector Net National Product	Dumenil & Levy, 1993: 354-61	DLNNP
Private Sector Total Wage	Derived from Dumenil & Levy, 1993: 354-61, (wage * total hours worked)	DLPSW
Private Sector Capital Stock	Dumenil & Levy, 1993: 354-61	DLPSK

## Variables from the Historical Statistics of the United States

Net National Product	F6-9	HSNNP
Share of Compensation of Employees in National Income	F186-191	HSSCE
Share of Unincorporated Income (Proprietor's income) in National Income	F186-191	HSSPI
Corporate Income Tax	Y358-373	HSTAX1

## Data Source and Construction for Different Historical Periods

### 1929-2000

$Y = \text{Output} = \text{BEANNP}$

$K = \text{Capital Stock} = \text{BEAK}$

$\text{Wage Costs} = \text{BEATOTW} + \text{BEAPROPINC} - \text{Profit Component in Proprietor's Income}$

Where,  $\text{Profit Component in Proprietor's Income} = \text{BEAPROPW} * \text{BEAP} / \text{BEACORPW}$

Hence  $\text{Wage Costs} = \text{BEATOTW} + \text{BEAPROPINC} - (\text{BEAPROPW} * \text{BEAP} / \text{BEACORPW})$

$\text{Taxation Costs} = \text{BEATAX1} + \text{BEATAX2} + \text{BEATAX3}$

Therefore,  $\text{Profit} = \text{Output} - (\text{Wage} + \text{Taxation costs}) = \text{BEANNP} - (\text{W} + \text{T})$

$= \text{BEANNP} - [\text{BEATOTW} + \text{BEAPROPINC} - (\text{BEAPROPW} * \text{BEAP} / \text{BEACORPW}) + \text{BEATAX1} + \text{BEATAX2} + \text{BEATAX3}]$

### Pre-1929

#### Output:

For 1919-28  $Y = \text{Output} = \text{net national product or NNP}$  (series F6-9, BEA Historical Statistics)

For 1917-18  $Y = \text{NNP } \$63.3 \text{ billion}$  (derived from series F6-9, BEA Historical Statistics)



For 1897–1916 individual annual NNP has been estimated using the following formula:

NNP = Dumenil and Levy Private Sector NNP \* (BEA 5-year average of NNP / D&L 5-year average of Private Sector NNP), with 1917–18 using two-year average (Dumenil & Levy, 1993).

For 1869–96, the NNP ( $y$ ) for 1897–1929 was regressed on D&L private NNP ( $x$ ) using the formula:  $\ln(y) = a + b \cdot \ln(x)$ . The estimated coefficients were then used with D&L private NNP for 1869–96 to estimate BEANNP.

### **Wage Costs:**

For 1900–28, the share of wage costs in national income has been derived using the following formula:

Share of wage costs in national income = compensation share + unincorporated income share \* 80%

These are denoted as BEA average wage shares.

The share of D&L private sector total wage in national income for each year between 1900–28 was calculated. From these figures, the five-year averages of D&L total wage share (four year average for 1925–28) were determined. These are denoted as D&L average wage shares.

Wages costs for each individual year between 1897–1928 were estimated using the following formula:

Wage costs = D&L private sector total wage X (BEA average wage share / D&L average wage share)

For 1897–99, the ratio of BEA average wage share over D&L average wage share was assumed to be the same as for 1900–04.

For 1869–96, the wage costs (1897–1928) ( $y$ ) were regressed on D&L private sector wage (1897–1928) ( $x$ ) using the following formula:  $\ln(y) = a + b \cdot \ln(x)$ . The estimated costs were then used with D&L private sector wage (1869–96) to estimate the wage costs.

## Taxation Costs:

Taxation costs for 1897–1928 were determined using the following formula:

Taxation cost = indirect taxes less subsidies + corporate income tax = net national product – national income + corporate income tax (corporate income tax figures from Historical Statistics Series Y358–73 with other years assumed to be zero).

For 1869–96, the taxation costs ( $y$ ) for 1897–1928 were regressed on the net national product ( $x$ ) using the following formula  $\ln(y) = a + b \cdot \ln(x)$ . The estimated coefficients were then used with the net national product for 1869–96 to estimate the taxation costs.

The sum of wage and taxation costs for 1869–1929 were then determined.

Profit was determined in the usual manner, as  $P = \text{output} - (\text{sum of wage and taxation costs})$ .

## Capital Stock:

For 1925–2000,  $K = \text{Capital Stock} = \text{BEAK}$

For 1869–1924, the BEA series of net stock of private nonresidential fixed assets ( $y$ ) were regressed on D&L net private capital stock series ( $x$ ) for 1925–89 using  $\ln(y) = a + b \cdot \ln(x)$ . The estimated coefficients were then used with D&L net private capital stock series for 1869–1924 to estimate the net stock of private capital compatible with the post-1925 BEA series.

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