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CHAPTER THIRTY-THREE

THE EFFECT OF ECONOMIC FREEDOM ON LABOR MARKET EFFICIENCY AND PERFORMANCE LEE OHANIAN



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The Effect of Economic Freedom on Labor Market Efficiency and Performance

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Introduction

The *labor market* is the centerpiece of every economy. It determines how society's human resources are utilized, both over time and across individuals, and how much workers are compensated for their labor services. In all countries, the labor market is the largest market in the economy, with workers receiving roughly 60 percent or more of the total income that is generated by market production.

An equally important issue is how well the labor market functions. The difference between a poorly- functioning labor market and a well-functioning labor market can mean millions of lost jobs and billions of dollars in lost incomes.

Government policies and institutions have important effects on the efficiency of the labor market. In some economies, such as the United States, labor markets are not heavily regulated, tax rates are fairly low, and economic freedom is relatively high. In some other countries, labor markets are heavily regulated, tax rates are high, and consequently there is less economic freedom.

This paper summarizes research on how government policies that affect freedom of choice within the labor market impact its performance and efficiency. These policies include taxation, minimum wages, unionization, and occupational licensing requirements.

This review shows that freer labor markets, which have lower tax rates, less regulation, and more competition are much more efficient and dynamic, and are associated with higher employee compensation, greater employment, and significantly higher incomes than labor markets with more regulation and higher taxes.

These findings have important implications for economic policy making. They indicate that policies that enhance the free and efficient operation of the labor market significantly expand opportunities and increase prosperity. Moreover, they suggest that economic policy reforms can substantially improve economic performance in countries with heavily regulated labor markets and high tax rates.

The U.S. Labor Market: Stability Enhances Economic Growth

This section presents employment, hours worked, and employee compensation data to summarize the performance of the U.S. labor market. These data will show that the U.S. has a very dynamic labor market that absorbs the large number of new workers constantly entering the labor force and that also reallocates workers across sectors in response to the enormous changes observed in economic and social conditions that have occurred since 1960.

This section will also show that U.S. worker compensation has increased over time at nearly and that the shares of income paid to labor and capital have been roughly constant over time after adjusting for capital depreciation.

Figure 1 shows the total number of market hours worked in the United States relative to the U.S. working age population, whom are those between the ages of 16 and 64 years. This is the most complete measure of market work, because it combines employment data with the number of hours per worker. This ratio is naturally interpreted as the average annual number of



Figure 1 Annual Hours of Market Work

market hours worked per U.S. adult. The data are compiled by Cociuba, Prescott, and Uberfeldt (2018).

Standard economic principles indicate that hours worked per adult should be relatively stable in a well-functioning market economy. These data are largely consistent with this view. The average annual hours worked per adult per year in these data is about 1,360 hours, with a standard deviation of just 76 hours per adult per year, which is about six percent of the mean.

The stability of U.S. hours worked per adult is associated with enormous employment growth. Figure 2 shows the number of full-time equivalent U.S. employees since 1960. These data, which are constructed by the Bureau of Labor Statistics, highlight the dynamism of the U.S. economy. Full-time employment grew smoothly from about 56.5 million full-time equivalent workers in 1960 to about 127.5 million in 2018. This is a gain of about 142 percent.



Figure 2 US Full Time Equivalent Employees (Millions)

While there are some fluctuations from trend growth, particularly around the recessions of the early 1980s, 2000-01, and 2008-09, the otherwise fairly smooth operation of the U.S. labor market is striking. Looking at these graphs, one would be hard pressed to identify many of the

large economic and social changes that occurred over this period and that could have significantly impacted the labor market's ability to absorb and allocate workers.

One such factor is the 38 million person Baby Boom cohort that entered the labor market between the late 1960s and the early 1980s. This large influx of young workers did not disrupt the U.S. labor market. Rather, the graph shows that the labor market readily absorbed this massive increase in the supply of new workers.

Another major factor impacting the labor market has been an ongoing shift from a goodsproducing economy to a services-producing economy, in which manufacturing's share of employment declined from more than 25 percent in 1960 to less than ten percent today.

The substantial increase in labor force participation of women has been another key factor impacting the labor market. Women's participation rose from just 35 percent in the mid-1950s to about 60 percent by the mid-1990s.

There are other significant factors that affected the U.S labor market since 1960. These include the enormous increase in globalization of production, investment, and trade, and the development of information and communications technologies, which in turn gave rise to transformational businesses including Microsoft, Apple, Google, and Amazon, among others. These businesses have not only completely changed several major sectors of the economy, but also have created enormous cultural and social change.

All these developments were permanent, game-changing events in the history of the U.S. economy, yet the U.S. labor market responded to these changes by efficiently absorbing new workers and also reallocating workers across firms, industries, and sectors.

The rapid reallocation of labor is particularly striking in the U.S. About four percent of U.S. employment turns over every month, as workers leave existing positions and move to new positions. With a current employment level of about 132 million workers, this means the equivalent of about 65 million job changes in the U.S. each year.

This remarkable level of job reallocation highlights a rapidly evolving and growing economy, in which the labor market quickly moves workers from slower growing firms and industries to more rapidly growing firms and industries.

The next two figures present data on average worker compensation, which is the price of labor. These two figures clarify two commonly held, but misunderstood views about worker compensation and the distribution of income. One misunderstood view is that inflationadjusted compensation has grown very little over time. The other is that the distribution of net



Figure 3 Productivity, Hourly Wage and Total Compensation, Inflation-Adjusted with CPI and IPD

income has substantially shifted from workers to capital.

In a competitive, well-functioning labor market, worker compensation grows with worker productivity. Higher productivity means higher value-added, and growing worker productivity leads businesses to bid up compensation as they compete for workers.

Figure 3 shows real GDP per worker, which is the most common measure of economy-wide labor productivity, along with three different measures of inflation-adjusted compensation, two of which are commonly used, but are plagued by significant conceptual and measurement flaws. Taken together, these three series show why some commentators claim that compensation has grown very little over time, and that it has not nearly kept up with productivity increases, and why these views are mistaken.

The brown line shows worker wages divided by the Consumer Price Index (CPI). This measure is frequently cited by commentators who argue that workers have not received any significant, inflation-adjusted salary increase for decades, even though their productivity has increased. ¹

There are two key problems with this frequently-used measure that makes it inappropriate for inferring compensation growth and for comparing compensation to worker productivity. One is that non-wage benefits, which include employer-provided health plans, and vacation, among other compensation, have become an increasingly large fraction of total compensation.

In the 1960s, non-wage benefits accounted for only about six percent of employee compensation. Today, they have grown to about 1/3 of total compensation, as the value of employer-provided health plans has grown substantially. This large component of compensation is omitted by those who focus just on wages. Moreover, this indicates that while wages may have been a reasonably accurate measure of compensation 60 years ago, they are not today, and should not be used as a proxy measure of employee compensation now.

The second problem with this measure is in terms of comparing it to productivity. This is because the GDP deflator is used to construct worker productivity, but the CPI is used to deflate the wage. Comparing worker compensation to productivity requires that the same price index be used to deflate both measures. The appropriate price index for making this comparison is the GDP deflator, because it is by far the broadest price index available, covering all market goods and services.

It is well known that the CPI overstates economy-wide inflation. This means that wages deflated by the CPI will not only be biased downwards because of omitted non-wage compensation, but also because the CPI grows considerably faster than the GDP deflator.

¹ See Presidential candidate Tom Steyer's recent statement about compensation not growing.

To see how much the errors of (1) using wages rather than total compensation, and (2) using the CPI instead of the GDP deflator matter for these issues, Figure 3 shows two additional measures, which are total compensation deflated by the CPI, and the appropriate measure for comparing to productivity, total compensation divided by the GDP deflator.

The figure shows that total compensation deflated by the CPI grows over time, in contrast to wages. The difference between these two measures shows the difference between using the appropriate measure of total compensation versus wages, and highlights the large quantitative error induced by using just wages as a measure of living standards.

Total compensation divided by the GDP deflator is the third measure presented in the Figure. This measure shows very strong growth over time. There is some divergence between productivity growth and compensation growth after 2000. Economists are studying potential factors accounting for this divergence. While this presently remains an open question, this divergence has not been caused by a shift of net income from workers to capital, which is another widely-held perception.

Rather, this view about labor's share of the economic pie is largely based on a conceptual error. To see this, Figure 4 shows the distribution of income between labor and capital, net of capital depreciation. The data exclude the self-employed, for which income attribution between labor and profits is ambiguous. The figure shows a relatively constant share of income paid to labor, at about 66 percent. These data stand in sharp contrast to the view that owners of capital are receiving a considerably larger share of net income at the expense of workers.



Figure 4 Labor Share of Net Income in Non-farm Business Sector

Rising capital depreciation rates are the reason why labor's share of income net of depreciation has remained constant, even if its share of gross income has declined. The U.S. Bureau of Economic Analysis has changed the definition of capital investments to now include what are known as intangible investments that previously had been expensed items, such as computer software.

These newly classified investments tend to have very high depreciation rates. In addition to expenditures that are now being classified as capital investments, there is also a greater share of business investment in previously existing, high depreciation categories, such as computer equipment, which depreciates must faster than other investments, such as office buildings and factories.

Higher depreciation means a higher gross payment to capital, all else equal. This is because investors require a specific rate of return, net of depreciation, in order to bear capital risk as well as postpone consumption. This rate of return must allow for depreciated capital that must be replaced. After accounting for higher depreciation, it is striking that the net payments to capital and labor have not changed in any quantitatively important way over time.

Taken together, these data indicate that the U.S. labor market has functioned efficiently over most of the last 60 years in terms of absorbing new workers, reallocating workers across firms, industries, and sectors, and providing compensation that grows roughly with worker productivity and whose share of net income has not changed over time.

U.S. labor market efficiency coincides with a significant amount of economic freedom and lack of economic policy distortions. The next section compares measures of U.S. labor market freedoms with those in some other countries.

Comparing Labor Market Freedom and Policies across Developed Countries

This section provides international perspectives on labor market freedom across countries. This comparison is informative because different countries have adopted very different labor market policies, which in turn have had large effects on the incentives and opportunities within the labor market. This comparison will show that the U.S. labor market is much freer than those in most other countries.

The Heritage Foundation and the Organization for Economic Cooperation and Development systematically rank countries on labor market freedom and flexibility.

Both these rankings have been conducted for many years and they are widely cited and used in making comparisons across countries and analyzing labor market outcomes.

The Heritage Foundation ranks the U.S. as having the most labor market freedom among all countries. The ranking is based on six factors: (1) The minimum wage relative to average value added per worker, (2) the cost of hiring new workers, (3) the cost of adjusting worker hours, (4)

the cost of dismissing redundant employees, (5) the length of term of mandated notice of dismissal, and (6) the extent and size of mandatory severance pay. Each of these factors in the Heritage Foundation index has important economic implications for the efficient and free operation of the labor market.

The minimum wage relative to average worker productivity gauges how many workers may be negatively affected by the minimum wage because their employment cost exceeds the value of their production. Specifically, if the minimum wage is higher than a worker's productivity, then the worker will not be hired because the hiring organization will take a loss on that worker. Instead, they will focus their hiring efforts on workers whose productivity exceeds the minimum wage.

In a free labor market, inexperienced workers would have many more opportunities because employers would not be restricted to pay them a wage exceeding the value of their production. Instead, workers would be paid according to their productivity. While inexperienced workers may be paid relatively low wages, their pay would rise as their skills increased with experience and job training.

Those who may be priced out of the market due to a high minimum wage include workers who have not yet acquired sufficient skills to realistically compete for higher wages jobs, such as young workers, immigrants, and workers who have been out of the labor force for a considerable period of time, such as parents who left the labor force to raise children, and workers recovering from long-term disabilities.

The remaining Heritage Foundation measures of labor market freedom are the expenses associated with adjusting and managing a company's workforce. In an efficient and free labor market, these costs should be relatively small on a per worker basis. However, these costs can be significant and may materially affect firm human resource decisions when regulations substantially affect these choices.

These adjustment and management costs include overtime premium and the costs of dismissing redundant workers, including the amount of severance pay and mandated

notification period of dismissal notice, as well as litigation costs and penalties for noncompliance.

As these costs rise, they tend to reduce employment and economic activity because they raise the cost of employing a worker without increasing worker productivity. Over time, higher employment costs resulting from regulations will tend to reduce wages.

The OECD's ranking focuses on what economists refer to as *labor market flexibility*. The OECD measures the extent of regulations on individual and collective job dismissal across countries. These regulations make it more expensive to dismiss workers, which in turn reduce employment by raising employee costs. High dismissal costs also impede resource reallocation across different sectors of the economy, and this also slows economic growth. The U.S. is also ranked first in the OECD's index.

The Heritage Foundation and OECD measures of labor market freedom and flexibility summarize factors that directly affect business's demand for labor by affecting the cost of labor. Labor supply, which is the other side of the labor market, is directly affected by other policies.

Some of the most important policies that affect labor supply are tax rates. Tax rates change the incentives to work either by reducing a worker's take home pay, (labor income taxes) or by making consumption goods more expensive (sales taxes or value added taxes).

In the standard model of labor supply, an individual weighs the costs and benefits of working and chooses how much to work at the point where the incremental cost of working, which tends to rise with hours worked, is equated to the incremental benefit of working, which tends to decrease with hours worked. Higher taxes reduce the benefit of working, which means that taxes induce workers to reduce their labor supply and work less, all else equal.

McDaniel (2007, 2011) has constructed panel data covering 15 OECD countries beginning in 1950. These data have been updated to 2015. These data show that there have been

enormous changes over time and across countries in the labor and consumption tax rates that affect labor supply.

Since labor income taxes and consumption taxes have similar effects on labor supply, I have combined McDaniel's data on labor income taxes and consumption taxes into a single composite tax rate by adding them together.²

Table 1 shows this composite tax rate for selected countries, including several European countries where these tax rates are particularly high. The data are for 2015, which is the most recent year that the data are available.

Table 1 - Combined 2015 Tax Rate on Labor Income and Consumption, in Percent

Austria	Belgium	Canada	France	Germany	Italy	Netherlands	Spain	UK	US
63.1	58.2	38.7	64.8	55.8	61.5	58.1	47.4	42.7	28.7

The table shows that the U.S. by far has the lowest composite tax rate at 28.7 percent. The composite tax rate for the European countries is much higher, ranging from 42.7 percent (United Kingdom) to 64.8 percent (France).

European tax rates were not always so high. In the 1950s, some European tax rates were lower than the U.S. tax rate. These tax rates rose substantially in the 1970s and early 1980s as many European countries expanded the size and scope of government during that period.

Table 2 shows how these tax rates have changed between 1950 and 2015. The table shows the difference between each country's 2015 tax rate and its 1950 tax rate, in percentage points.

Table 2 - Percentage Point Change in Tax Rates: 1950-2015

Austria	Belgium	Canada	France	Germany	Italy	Netherlands	Spain	UK	US
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² Labor income taxes and sales taxes on consumption have fairly similar effects on labor supply, as labor taxes reduce take home pay, which reduces the amount of consumption workers can purchase, while consumption taxes raise the cost of the goods, which also reduces the amount of consumption workers can purchase.

36.7	31.0	19.5	26.1	26.5	36.6	27.9	31.9	17.8	11.6
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In Europe, these tax rate increases range from 26.5 percentage point (Germany) to 36.7 percentage points (Italy). The mean tax rate increase among the continental European countries is 31 percentage points. In contrast, the U.S. tax rate increased by only 11.6 percentage points.

The next section summarizes research that uses tax rate data to analyze how tax rates have affected labor supply in the OECD countries.

How Tax Rates and Other Policies Affect Labor Markets across

Figure 5 Annual Hours of Market Work: France, Germany, Italy and US



Countries

Figure 5 shows hours worked per adult for the U.S., and for three major European countries, France, Germany, and Italy. The most striking features of these data is that the large drop in the number of market hours of work in the European countries, which are the countries with the largest increase in tax rates.

Hours of market work per adult in France fall from about 1,600 in 1950 to about 1,000 in 2015. Similarly, hours of market work per adult fall in Germany from about 1,550 to about 1,100, and from about 1,450 to about 1,050 in Italy. These are enormous declines. In contrast, U.S. hours worked change little, rising from about 1,250 to about 1,300.

These very different patterns in hours worked coincide quite closely with changes in the tax rate reported in the previous section. In particular, the composite tax rate increased by about 30 percentage points on average in the three European countries, and hours worked in those same countries declines by about 31 percent. U.S. tax rates rise modestly, and U.S. hours worked are unchanged.

Several studies have found that a standard model of labor supply that includes taxation accounts quite closely for these very different changes in hours worked.

Prescott (2004) studied how changes in tax rates affected hours worked per adult in Canada, Germany, France, Italy, Japan, the United Kingdom, and the United States. He used national income account data to construct tax rates and then used a standard economic model to predict how observed tax rate changes between 1970-74 and 1993-96 changed hours worked. He found that changes in tax rates accounted for almost all the change in hours worked across these countries. He summarizes his main findings as:

"In this article, I determine the importance of tax rates in accounting for these differences in labor supply for the major advanced industrial countries and find that tax rates alone account for most of them." (Prescott (2004), page 2).

Ohanian, Raffo, and Rogerson (2008) also employ a standard model of labor supply and analyze a larger panel of countries, covering 15 OECD countries, and over a longer time period, from 1956-2004. They use the McDaniel (2007, 2011) tax rate series, which was not available at the time of Prescott's analysis. Table 3 summarizes their findings. The model predicts the significant decreases in labor supply for Austria, Belgium, Germany, Netherlands, and the U.K. The model's prediction error is large for Spain, though that is understandable. Despite higher taxes, Spain implemented many promarket economic reforms and a shift to more democratic government after Franco left power. Those factors, which positively affect labor supply, likely attenuated the impact of higher taxes.

The Netherlands is a particularly interesting case, because after suffering a nearly 1/3 drop in hours worked per adult, they implemented lower taxes in the 1980s. Following this tax reform, hours subsequently rose by about 12 percent. The model accurately generates the very large drop from the 1950s to the 1980s, and then also generates the partial recovery in hours worked afterwards.

Of the twelve countries that experienced at least a fifteen percent decline in hours worked, tax changes account for about 85 percent of the overall drop.³

Country	Austria	Belgium	Canada	France	Germany	Italy	Netherlands	Spain	UK	US
Actual	-36	-34	8	-38	-40	-29	-21	-13	-22	4
Predicted	-31	-31	-11	-21	-34	-43	-21	-41	-16	-9

Table 3 – Actual and Predicted Percentage Change in Hours Worked: 1950-2015

Taken together, these studies highlight the quantitative importance of taxes and how they affect individual incentives to work. Moreover, the findings have important implications for fiscal policy. The sensitivity of labor supply to changes in taxes indicates that relying primarily on tax increases to balance budgets in countries confronting large deficits may significantly depress economic activity. Rather, balancing budgets should include cuts in government spending.

³ Canada, New Zealand, and Australia were the other countries in the dataset that had small changes in tax rates, and all had relatively constant labor supplies. These countries are omitted from the table because of space considerations.

Economists have studied how other policies have affected labor market performance, particularly unemployment. As discussed in Section 2, Europe has adopted political institutions and economic policies that have increased labor market rigidity and reduced economic freedom within the labor market.

Blanchard and Wolfers (2000) analyzed panel data from European countries to study how the level of unemployment benefits, the duration of benefits, unionization, and employment protection laws, affected European unemployment over time and across countries.

Economists have focused on Europe data because unemployment in many European countries has been much higher than in the United States. Since 1985, French unemployment has average around nine percent per year, and German unemployment has averaged around eight percent per year.

Blanchard and Wolfers found that labor market policies that have increased labor market rigidity and reduced economic freedom have had very large effects on unemployment. They find that the maximum benefit rate, which is the average unemployment benefit measured as a percent of the average wage, has increased European unemployment on average by 1.3 percentage points. They find that the duration of benefits, which has been very high in Europe, increased unemployment by about 0.75 percentage points. Employment protection policies, which raise the cost of dismissing redundant workers, raised unemployment by about one percentage point, and unionization raised unemployment by about 0.6 percentage points.

Taken together, the findings of Blanchard and Wolfers indicate that observed policies could have potentially increased European unemployment by as much as 4.6 percentage points per year. Note that this is the difference between a very healthy labor market, and one that is perpetually in a severe recession or even depression.

In another influential study, Ljungqvist and Sargent (1998) assess how labor market policies affect European unemployment with a focus on long-term unemployment, which is very prevalent in Europe.

They hypothesize that European policies tend to increase long-term unemployment because worker skills deteriorate as unemployment duration rises. In particular, their hypothesis is that some workers ultimately become chronically unemployed as their skills deteriorate so much that unemployment benefits, which have been quite high in Europe, become higher than their market wage. They find that well-intentioned policies account for much of the rise in long-term European unemployment as relatively high, and long-lasting benefits trap European workers in a persistent cycle of unemployment.

These findings have been confirmed for emerging economies. Bernal-Verdugo et. al. (2012) study a panel of 85 countries, many of which are developing countries, and find that "after controlling for other macroeconomic and demographic variables, increases in the flexibility of labor market regulations and institutions have a statistically significant negative impact both on the level and the change of unemployment outcomes (i.e., total, youth, and long-term unemployment). Among the different labor market flexibility indicators analyzed, hiring and firing regulations and hiring costs are found to have the strongest effect. "

Botero et al. (2004) report similar findings from an 85 country study. They find that highly regulated labor markets reduce labor force participation, and raise unemployment, particularly for young workers.

Minimum Wages: Theory and Evidence

At one time, there was nearly universal agreement among economists and policy makers that high minimum wages depressed employment, particularly for young people who were still in the process of accumulating skills and experience.

The economic logic behind this once standard view is simple. Fixing the price of any good or service above its market price will result in lower demand. In the labor market, this means that any worker who does not deliver enough value to offset an artificially high minimum wage will be unemployed.

Youth unemployment statistics highlight the impact of minimum wages. In mid-2012, more than two years after the end of the last recession, teenage unemployment (16 years – 19 years of age) was 25 percent, compared to a 6.7 percent unemployment rate for prime age workers, who are between 25-54 years old.

Even today, with the strongest job market in the last 50 years, teen unemployment is 12.6 percent, compared to prime age worker unemployment of 2.9 percent.

Despite the simple economic logic described above, and the observed large difference in unemployment rates by age, some commentators today hold the view that raising the minimum wage will have little, if any effect on unemployment, and instead will substantially raise the standard of living among nearly all low-wage workers.

Perhaps the major factor driving this change in opinion was research by David Card and Alan Kreuger (2015). In an influential paper, Card and Krueger compared changes in employment in fast food restaurants between New Jersey, which increased its hourly wage from \$4.25 to \$5.05 in 1992, and Pennsylvania, which kept its minimum wage at \$4.25. They surveyed about 400 fast food restaurants near the New Jersey-Eastern Pennsylvania border by phone, and asked restaurant managers about employment levels before and after the New Jersey minimum wage change.

They reported that the New Jersey restaurants had expanded employment by nearly three fulltime equivalent workers relative to Pennsylvania restaurants. This result was extremely surprising, as it defies the most basic economic argument that artificially raising wages of lowskilled labor depresses the demand for that labor.

However, there are problems with Card and Krueger's analysis, including data collection and with their research design. In terms of data collection, Card and Krueger relied on telephone surveys with the restaurants. Subsequent research based on better data collection showed very different results. In a series of papers and a book, David Neumark and William Wascher review many minimum wage studies, including that of Card and Krueger. In contrast to Card and Krueger, Neumark and Wascher redo the New Jersey and Pennsylvania fast food restaurant study by using administrative payroll data from fast food restaurants, rather than telephone interviews. Payroll data is more reliable than the telephone interview responses obtained by Card and Kruger because restaurants have a legal obligation to report taxable income and costs.

In contrast to the Card and Krueger study, Neumark and Wascher found that the higher minimum wage in New Jersey had reduced New Jersey employment by about four percent relative to Pennsylvania, in which the minimum wage was not changed. This finding is in line with standard economic logic and with the majority of previous empirical estimates of the impact of minimum wage.

Neumark's most recent review of many short-run minimum wage studies concludes as follows:

"The preponderance of evidence indicates that minimum wages reduce employment of the least-skilled workers. Earlier estimates suggested an 'elasticity' of about -0.1 to -0.2. Many estimates are still in this range...More definitively, though, it is indisputable that there *is* a body of evidence pointing to job losses from higher minimum wages. Characterizations of the literature as providing no evidence of job loss are simply inaccurate." (Neumark (2019), page 321).

More recently, economists have begun to study the long-run effects of minimum wages on employment. This is important, as the short-run responses to a higher minimum wage, which are the focus of much of the literature, may be very different than long-run responses. This is because it takes time for employers to make adjustments in response to minimum wage changes, including installation of new capital investments, and adoption of new technologies, both of which can substitute for workers.

Research by Isaac Sorkin (2015) shows that the difference between the short-run and long-run effects of minimum wage legislation can be enormous. Sorkin measures the responsiveness of

employment to a wage change using the economic concept of demand elasticity, which is the percentage change in labor demand in response to a given percentage change in the wage.

He shows that the contemporaneous elasticity of labor demand can be virtually zero upon impact of a minimum wage change, in which he estimates that a ten percent change in the wage generates an immediate .02 percent drop in employment. However, he finds that this sensitivity rises to -.252, meaning that a ten percent change in the wage generates a 2.5 percent drop in employment after six years, which is roughly a 100 times larger effect than the immediate effect.

This large difference reflects the fact that as labor costs rise, businesses economize on labor by substituting capital and new technologies for workers and also offshore some tasks to lower cost providers of labor services. This large difference between short and long-run effects is incredibly important, but rarely is documented by empirical studies.

Minimum wage research has important implications for current policy discussions. In particular, there are a number of proposals to raise the federal minimum wage from its current level of \$7.25 per hour to \$15 per hour.

At its current level, the minimum wage affects very few workers, just 0.28% of the labor force. According to the Labor Department, almost half of minimum wage workers are workers less than 25 years old, who account for only about 20 percent of the overall labor force.

However, if the minimum wage was raised to \$15 per hour, then it would affect over 40 percent of American workers. Alan Krueger, one of the authors of the New Jersey-Pennsylvania study cited above, and a former economic adviser to President Obama warned of job loss if the minimum wage was raised to \$15 per hour.

An important risk of a \$15 federal minimum wage is that low earners in relatively poor states would be particularly hard hit For example, the average hourly wage in Mississippi is under \$15 per hour.

There are policies that will improve the efficiency of the labor market while promoting compensation growth for those who may be adversely affected by the minimum wage. These policies include expanding the earned income tax credit, increasing the scope and scale of enterprise zones, which incentivize businesses to locate in poor neighborhoods, improving our K-12 education system, and expanding pre-school programs.

The Impact of Unions on Labor Market Performance

This section summarizes how unions have historically affected labor market efficiency and opportunities.

In the late 19th and early 20th centuries, unions focused on increasing worker safety, protecting worker civil rights and supporting education and limiting the use of child labor (see Ohanian (2009))

These efforts were important because labor markets were much less competitive at that time than they are now. In the 19th and early 20th centuries, there were often just a few large employers in a community, which gave employers much more market power than employers have today.

Since worker safety, human rights, and child labor regulations are now well established at both the federal, state and local levels, unions have shifted their focus to increasing compensation and increasing employment, in which the latter is a process known as "featherbedding." A large body of research finds that these aspects of unionization have benefitted union members, particularly in the short-run, but at the expense of others by depressing economic growth, particularly in heavily unionized industries. Moreover, research shows that unions depress longrun compensation for their members by reducing firm innovation and investments.

Unions have considerable market power in collective bargaining agreements since they are the sole supplier of labor services to the firm. There are hundreds of studies estimating union wage

premia. Lewis's survey (1986) finds estimated premia around 15-20 percent, meaning that union market power drives up compensation by 15-20 percent over the estimated free market compensation level. More recently, Farber et al. (2018), which include many references, also report similar union premia estimates.

One way this wage premium depresses economic activity is by raising employer costs. This in turn raises prices and reduces customer demand. Moreover, some of the methods by which unions have generated wage premia, which include strikes, independently depress economic activity. This is because a strike is a tax on investment. By idling a firm's capital stock, a strike, or even the threat of a strike, lowers the expected return to investment, which in turn lowers investment, innovation, and productivity growth. This has very negative consequences for the long-run health of the firm, and ironically, for the long-run health of the union.

Alder et al. (2019) analyze the impact of strike behavior and provide both theoretical arguments and empirical evidence that the frequent use of strikes and strike threats in major Rust Belt industries, such as autos and steel is the main factor responsible for the Rust Belt's long-run economic decline.

The Rust Belt, which is typically defined as states bordering the Great Lakes, including Ohio, Pennsylvania, Michigan, Illinois, and New York, accounted for more than 50 percent of the nation's manufacturing employment in 1950. That share declining chronically throughout the 1950, 1960s, and 1970s, until it has fallen to about 38 percent by 1980. This decline preceded the large shift to globalization that began around the mid-1980s, and that is widely believed to have negatively affected U.S. manufacturing. However, the timing of the Rust Belt's decline means that

Alder et al. (2019) find that the historical use of the strike threat by Rust Belt unions accounts for about 2/3 of the decline of the Rust Belt's manufacturing employment share. They also find that it accounts for much of the Rust Belt's failure to innovate at the same rate as non-Rust Belt producers. Their most striking conclusion is that in the absence of labor market conflict with unions, the Rust Belt's manufacturing employment share would have held steady at about 51 percent, even with stronger foreign competition. This is because globalization doesn't just replace domestic sales with imports but provides opportunities for competitive domestic producers to sell abroad, thus creating new markets.

Schmitz (2002, 2005) studies how union work rules that severely limit the tasks that employees can perform in order to increase employment can depress worker productivity by 50 percent or more. These work rules can be as restrictive as not allowing a worker to perform minor maintenance on a machine, or change a light bulb. He shows that when iron ore producers were subjected to increased competition, union work rules were reformed to permit workers to perform more tasks, which doubled worker productivity.

Similarly, Holmes (1998) studies job creation and economic performance right at state borders, in which one state is relatively heavily unionized, and the state just across the border is a "right to work" state, which outlaws the union shop. He finds that employment growth over time is much higher in manufacturing plants in the right to work states very close to the border, than in manufacturing plants that are close to the border in the heavily unionized states.

Union representation among private sector workers has declined from a high of about 35 percent in the early 1950s, to only around six percent today. This likely reflects several economic shifts since World War II that have led today's workers to find union representation less attractive.

Perhaps the most important factor is changes in competition. As described above, yesteryear's unions imposed significant economic inefficiencies within bargaining at a time when many United States producers faced little competition, either domestically or internationally. But in today's increasingly competitive marketplace, any form of inefficiency threatens firm survival.

A second reason why union organization is much less popular today is that collective bargaining agreements invariably offer a "one-size fits all" compensation package for its members. But as

workers have become increasingly skilled, and as job responsibilities have become much more specialized, collective bargaining has become outdated.

The fact that private sector workers are not choosing union representation is the strongest evidence in supporting the view that the union model of yesteryear is not sufficiently valued by today's private sector workers.

Private sector unions have responded to these long-run trends driven by substantially changing bargaining practices to focus on forming cooperative relationships with management and enhancing firm efficiency and performance to increase competitiveness. As an example of this change in union practices, former UAW President Robert King summarized the very significant changes in United Auto Worker practices as follows (see Walsh (2010)):

"The 20th-century UAW fell into a pattern with our employers where we saw each other as adversaries rather than partners. Mistrust became embedded in our relations...this hindered the full use of the talents of our members and promoted a litigious and time-consuming grievance culture."

These long-run changes in private sector unionization density and bargaining practices are natural reactions to increasingly competitive markets, and they are generally improving labor market function by reducing inefficiencies.

The Inefficiency of Occupational Licensing

Licensing occupational practices by a professional bureau has been employed for many years in skilled professions where there is potential for substantial consumer harm. These practices include medicine, law, and dentistry. Licensing is intended to protect consumers by providing objective, third-party confirmation that a provider is professionally qualified to perform their trade.

More recently, professional licensing has spread to many other occupations, particularly occupations where potential consumer damage is extremely modest, such as tour guides, cashiers, card dealers, florists, interior decorators, and hair shampooers. Licensing even extends to professions that are as much or more about providing entertainment as providing a service, such as Maryland, which requires licenses for fortune tellers, and Arizona, which requires licenses for rainmakers. (See Kleiner (2000)).

Today, 29 percent of workers require a professional license, which is up from 18 percent in 2000, and from about five percent in the 1950s. Put differently, this means that nearly 1 out of 3 workers must have government approval to work in their chosen profession.

Most research analyzing occupational licensing has concluded that much of this licensing is not in the interest of protecting consumers, but rather exists to insulate incumbent producers from competition at the expense of consumers.

Licensing limits entry of new professionals, which in turn reduces competition in the industry. Licensing fees also raise the cost of doing business. Both these factors drive up prices, thus reducing demand and harming consumers. Kleiner (2000) finds that wage premia as high as 30 percent due to restricting entry.

Ironically, licensing can also harm incumbent licensees once political and social pressure builds to force regulators to allow reforms. For example, In New York, livery drivers, particularly tax drivers, required a taxi medallion, which simply gave a driver the legal right to operate. Before the popularity of ridesharing, including Uber and Lyft, the market price of these medallions was as high as \$1,000,000.

However, this price has now fallen to about \$100,000, given the introduction of competition from Uber and Lyft. Tragically, this decline in the price of medallions has led to the loss of virtually all of the wealth of some drivers, who purchased their medallions at very high prices. This in turn has led some of these drivers to take their own lives. Occupational licensing has also been found to negatively impact historically disadvantaged groups by imposing long training and/or internship periods. (see Gittelman et al. (2018)). For example, over 1700 hours of training are required to become a licensed cosmetologist in California, while 4,000 of training are required to work with electrical signs in Michigan. Note that this latter requirement may exceed the number of hours used by law students in taking classes, studying, and preparing for the bar exam.

The negative impacts of occupational licensing led then President Obama to commission a special study of this issue by his Council of Economics Advisors and the Treasury Department. They concluded the following:

"...the current licensing regime in the United States also creates substantial costs, and often the requirements for obtaining a license are not in sync with the skills needed for the job. There is evidence that licensing requirements raise the price of goods and services, restrict employment opportunities, and make it more difficult for workers to take their skills across State lines. Too often, policymakers do not carefully weigh these costs and benefits when making decisions about whether or how to regulate a profession through licensing."

Summary and Conclusion

This study has summarized research on how economic freedom affects the labor market. Research shows that high tax rates, high regulations, including occupational licensing, inefficient unionization bargaining practices, and high minimum wages, depresses the efficient functioning of the labor market. It also shows that many of these policies have benefits for very few, while imposing significant costs on the rest of society.

The research cited here has important implications for economic policies. It shows that policy reforms that reduce tax rates and eliminates burdensome regulations, and that enhances competition, can significantly increase economic growth and job creation. Moreover, the

increased economic growth would dwarf the costs to those who currently benefit from the inefficient policies. This means that those who would lose from such reforms could in principle be easily compensated in the form of income support and job retraining.

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