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Organized Labor in a Globalized World:
The Impact of Increasing International Economic Integration
On the Strategies of Trade Unions

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Abstract

Evidence is mounting that economic globalization has had a detrimental effect on intrastate inequality, especially in industrialized nations. One possible causal mechanism by which to explain this relationship is the declining bargaining power of labor and, particularly, organized labor. This work argues that as a result of trade competition and the threat of outsourcing, trade unions are less capable of demanding wages, benefits, and job security from employers. Furthermore, unions will respond to declining bargaining power by augmenting their lobbying efforts for human capital and infrastructure investments as a means of fortifying labor's relative position in negotiation, and thus its ability to demand compensation and job security. Furthermore, it is argued that unions will increase their pressure on the government for unemployment insurance to offset declining security in the marketplace.

A two stage methodology is adopted to evaluate the validity of this theory. Panel data from 30 industrialized nations supplies evidence that globalization diminishes the effect of union strength on compensation and some types of employment protection, while increasing the positive impact of trade unions on investment in training, infrastructure, and unemployment insurance. Following this statistical analysis, unions in two sectors of the British economy, manufacturing and construction, are examined to show that these effects are a conscious decision on the part of union leaders and that they are indeed the result of globalization.

Collectively, the evidence suggests that globalization is indeed causing unions to emphasize productivity in their demands for compensation. Furthermore, the cross-national analysis provides support for the claim that unions are pressuring the government for increased social spending to support of the working class during periods of unemployment, though the micro foundations could not be established in the case study. Contrary to theory, it appears that unions are still pushing for government employment protection, perhaps even more than employment insurance, as a consequence of globalization. Finally, the case study makes apparent that trade unions have a number of other policy responses at their disposal which theory does not take into account.

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Introduction: Unheard-of Wealth and Unheard-of Poverty

The industrial revolution saw a remarkable rise in prosperity. The accumulation of material wealth has continued at an unprecedented rate. In less than three hundred years, the blink of an eye in human history, we have gone from an agrarian society to the world of iPhones, of 90-year life expectancies, of surplus. Yet, lest we be doomed to repeat it, we must be careful to remember the beginning of this change, the early days of the revolution, when “[t]o the bewilderment of thinking minds, unheard-of wealth turned out to be inseparable from unheard-of poverty (Polyani 1945, 102).” Economic change can have winners and losers, and a growing pie does not automatically translate into a bigger piece for everyone. How wealth is distributed matters.

Unions have historically played a major role in the equalization of wealth in industrialized nations, both through the market and through the state. In fact, union density is the single most effective predictor of the level of inequality in Western democracies (Rueda and Pontusson 2000). While unions provide a number of benefits to its members and to society at large, as one trade unionist put it: “We all know that people join trade unions on the basis of wages and conditions (TUC 2008, 160).” However, by decreasing the demand for unskilled labor, increasing price competition, increasing the substitutability of labor, and increasing pressure on the government to liberalize the labor market, economic globalization¹ may be diminishing the overall bargaining power of unions. In turn, this may be causing a decline in the ability of labor unions to accomplish their ends of improved wages and conditions, their *raison d’être*. Nevertheless, one would be remiss to think trade unions either impotent or intransigent.

I contend that, in response to globalization, unions are restrained in their demands for compensation from their employers due to their diminished bargaining power. Furthermore, I

¹ This concept will be more specifically defined below; however, the major aspects of economic globalization in this

argue that unions are less capable of achieving the level of employment protection that they previously enjoyed. However, I maintain that unions will refocus their attention towards investments in productivity that will increase the relative value of labor and thus the bargaining power of unions. These investments will be in human capital, which will increase the relative value of labor, and in infrastructure, which will decrease the relative cost of production. Furthermore, unions will recognize that global capital challenges the ability of the state to regulate the economy, and that this will prevent labor unions from being capable of demanding the level of employment protection they had previously enjoyed. As a result, trade unions will put more attention on unemployment insurance, in order to prevent members forced out of work to be forced into poverty.

Evidence for this theory will be provided from two types of sources. The first is an examination of cross-national time series data of 30 industrialized nations from 1970-2009.² This data will make it possible to show the effects of both union strength³ and globalization on compensation, employment protection, investments in training, the quality of infrastructure, and unemployment insurance. More importantly, through the use of interactive effects this data will make it possible to evaluate how globalization changes the effect of union strength on these five outcomes. This quantitative analysis will be followed by an in-depth examination of the behavior of two sectors of the British economy: manufacturing and, for contrast, construction. These two industries are selected for their variation in exposure to globalization. Among other sources, this analysis includes data on labor disputes, 16 years of transcripts from the annual Trades Union Congress, and an interview with a top union official.

² Availability of data varies by country, by year, and by variables included, therefore the total number of observations and the exact countries and years included will vary for each analysis.

³ This variable is conceptualized below, but it operationalized as the product of union density and union centralization.

There is evidence that globalization is increasing the total wealth of societies (Dreher 2006, Tsai 2006). However, as history has shown, national wealth does not preclude endemic poverty. During the 20th century trade unions played a vital role in tempering the detrimental consequences of capitalism on the welfare of the working class. More recent history has witnessed a variety of forces shift the balance of power among the factors of production. Unions can no longer protect their members and the working class in the way they once did. Unions must adapt, and I argue they are.

Literature Review:

The Inequality of Bargaining Power

To understand the role of unions in the distribution of wealth in a society, and how globalization may change that, one must first understand the nature of bargaining power.

Bargaining power can be defined as an one actor's ability to compel another into accepting an agreement on his or her terms (Chamberlain 1955). This is very similar to Dahl's definition of power as compliance: "A has power over B to the extent that he can get B to do something that B would not otherwise do (Dahl, Jonson 1981, 251)." Bargaining power is therefore an essential concept when discussing how any two actors negotiate.

In 1948, Charles Lindblom decried the concept of bargaining power as "blunderbuss (1948, 403)." He argued that bargaining power is essentially the same thing as price setting, and the creation of a separate concept in the discussion of the labor market does more to obscure understanding than to enlighten. He proceeds to explicate three dimensions of price setting which can be used to understand the effects of globalization:

1. Tastes, goals, and motives. Kinds and strength. This includes such factors as the goals of the monopolist, attitudes toward prolonged and stubborn negotiations, willingness to picket or undergo temporary loss of wages during a strike, etc.
2. Skills in techniques of persuasion and coercion. This includes all those techniques important in winning points around the bargaining table, such as the capacity to out-guess and out-bluff one's opponent, and also the capacity to devise and administer special coercive techniques such as political influence, public opinion, or the strike.
3. Competition from other buyers and sellers. This is, of course, not limited to other buyers and sellers of the same commodity or service in question. It includes all factors which influence the efficacy of competition as a limit on discretionary power over price. The categories overlap, and the classification is not so sharp as one might wish. Nevertheless, it will perhaps serve as an adequate summary statement of factors in price and wage determination, implying in effect a process in which the individual (group) attempts to set prices or wages according to his (its) own tastes and motives but is limited according to the particular skills developed or available and by competitive conditions. (Lindblom 1948, 402).

The key pathway through which globalization is expected to influence labor's bargaining power is through increased competition from other sellers, i.e. other workers willing to sell their labor, and, to a lesser extent, the ability of trade unions to bring political influence to bear. In simple

terms, in the market, the greater a buyer's (seller's) bargaining power the more capable he or she is of compelling a seller (buyer) to lower (increase) the price of the good or service being provided. Labor's bargaining power therefore is its ability to extract the greatest possible compensation from the employer for the sale of its labor, including its ability to levy the influence of the state in both pre-fisc and post-fisc distribution. A final point of conceptualization is that one must be sure not to assign static bargaining power to an actor. Bargaining power is issue specific. For example, while unions may be weak in their ability to demand wages directly from employers, they could still have the ability to demand safety improvements.

No discussion of the bargaining power of labor would be complete without some exploration of the historic nature of the relative bargaining power of capital and labor. The literature on this subject extends at least as far back as Adam Smith, who wrote:

The workmen desire to get as much, the masters to give as little, as possible...It is not, however, difficult to foresee which of the two parties must, upon all ordinary occasions, have the advantage in the dispute, and force the other into a compliance with their terms. The masters, being fewer in number, can combine much more easily ... In all such disputes, the masters can hold out much longer. A landlord, a farmer, a master manufacturer, or merchant, though they did not employ a single workman, could generally live a year or two upon the stocks, which they have already acquired. Many workmen could not subsist a week, few could subsist a month, and scarce any a year, without employment. In the long run, the workman may be as necessary to his master as his master is to him; but the necessity is not so immediate (2000 [1776], 112-113).

This idea of "inequality of bargaining power," was further elaborated upon in Industrial Democracy (Webb and Webb 1902 [1897]). The crux of this concept is that labor is innately at a disadvantage in negotiations with capital. This inequality is easily understood in Lindblom's conceptualization of bargaining power. With the exception of skilled labor, workers are substitutable, and thus face substantial competition with one another, pushing wages down to subsistence level. Workers lack the resources to use special coercive techniques such as levying political pressure. Their relative isolation leaves actions such as picketing ineffectual. On the other hand, employers tend to act as monopsonies, capable of setting the price. The answer to the

challenge of unequal bargaining power is the union. The question then becomes, what influence globalization has on this solution.

Globalization Has Gone Too Far

In a market economy, the principal manner through which resources are allocated is return on investment to the factors of production. The landlord gets his rent, the stockbroker gets his dividends, and the worker gets his wage. The rate of return to these factors, the division of the surplus of production, price setting, is determined by the relative bargaining power. Therefore, if a force systematically and significantly alters the bargaining power of factors, it can, in turn, have a marked effect on the distribution of wealth within a society and result in a substantial increase in inequality. How societies respond to such forces is thus of profound importance, both due to normative concerns over inequality itself, and because inequality has been found to have negative effects on other social goods, including poverty reduction (Ravallion 1997, Wagle 2010), health (Babones 2008), economic growth (Herzer 2012, Boix 2009), political stability (Boix 2003, 2008; Acemoglu and Robinson 2006), and democracy (Schlozman et al. 2005).

Evidence is mounting that economic globalization is one such force, altering the bargaining power of labor, and leading to increased intrastate income and factor inequality worldwide (Cornia and Kiiski 2001, Harrison 2005, Kaplinsky 2006, Basu 2006, Vijaya and Kaltani 2007, European Commission 2007, Dreher and Gaston 2008, Stockhammer 2009, Brady 2009, Meshci and Vivarelli 2009, Bergh and Nilsson 2010, Pavcnik 2011). Certainly, there are those who challenge this perspective (Zhou et al. 2011, Tsai et al. 2012); yet, in spite of these naysayers, the larger controversy is rather in what manner globalization is affecting the bargaining power of labor, and that of labor unions, and thus of equality.

According to the Heckscher-Ohlin model, increased trade will result in an increased demand for the relatively abundant factor of production. As a result, international trade should cause increasing bargaining power of capital in industrialized countries, where capital is abundant, and a concurrent increase in demand for labor in the developing world. As capital tends to be concentrated, this will cause increasing inequality in rich nations and decreasing inequality in poor nations (Kremer and Maskin 2001). Despite the explanatory power of this theory, empirical evidence shows inequality is also rising in the developing world (Echeverri-Gent 2009), indicating that the H-O model is an incomplete explanation. This contradiction of theory might be elucidated if one were to think of skilled and unskilled labor as different factors of production. On face value, this should not change the effect on inequality, as rich nations have relatively more high skilled labor than low skilled labor. However, unskilled labor in rich nations is generally still literate, a characteristic less common in the developing world. Therefore, tasks completed by what would be considered “unskilled labor” in the developed world are performed by “skilled labor” in the poorer nations, resulting in trade favoring the relatively skilled minority in both nations (Gaston and Nelson 2002). Either way, the result in *industrialized nations* is decreased bargaining power of labor due to decreased demand for unskilled labor.

Globalization further influences bargaining power by placing domestic firms in competition with foreign companies. Firms must keep their prices equivalent to those of their rival, limiting their ability to pass wage increases on to the consumer. Firms must either be efficient or fail. The effect on the incomes of workers will be most pronounced in sectors in which labor has traditionally been able to capture a large share of rents of production, such as highly unionized industries (Abraham et al. 2009). It is well established in the literature that unions are less capable of extracting higher wages from employers when in highly competitive

markets (Michel 1986). Proponents of trade unionism have been aware of this challenge since the 19th century, and this was one of the impetuses for industry-wide unions and covering laws (Webb and Webb 1902 [1897]). Furthermore, the excuse of competitive pricing, even when not a reality, may increase capital's bargaining, as capital generally has better knowledge of the financial state of the firm than individual employees (Coff 1999). Additionally, if trade competition is accompanied by capital mobility, firms may choose to outsource to foreign nations where cheaper labor is available, making them more competitive but increasing unemployment at home (Boix 2011). The idea that international competition undermines the ability of unions to improve the conditions of their members is not new. In 1847, Karl Marx remarked, "If the combinations [unions] were to succeed in keeping the price of labour so high in one country that profits fell significantly in relation to the average profit in other countries, or so that capital was held up in its growth, stagnation and recession of industry would be the consequence, and the workers would be ruined together with their masters (435)."

Even if labor is not cheaper abroad, greater capital mobility increases the total labor pool. If a firm can move between countries, then steel workers in the USA have to compete with steel workers in Japan, China, the UK, German, and the rest of the world for the same job. As a result, labor becomes increasingly substitutable, even when domestically organized, as capital has a legitimate threat of exit in negotiation. Rodrik famously showed in Has Globalization Gone Too Far? that this threat of exit augments the bargaining power of capital, resulting in labor capturing a smaller share of the rents of production (1997). Some evidence actually shows that trade between rich countries actually hinders demand for labor more than that between developed and developing nations (Greenaway, Hine, and Wright 1999).

Additionally, states competing for footloose capital may decrease labor regulations and push down wages, as “low labor costs and loose labor protection [are] regarded as necessary means to attract foreign investors (Lou and Zhang, 2010).” This “race to the bottom” is well-documented in the literature (Boulhol 2009, Singh and Zammit 2004, Ronconi 2012), although others continue to refute its existence (Potrafke 2010). The ability to bring the power of the state into negotiations with capital has been an essential component of labor’s bargaining power, and an important factor in restraining inequality (Calderon and Chong 2009). If this too is undermined, the options of labor are even further restrained.

Through these four causal mechanisms: decreased demand, increased competition, increased substitutability, and decline in support from the state, labor’s relative bargaining position with capital is diminished. This is upheld by empirical findings that globalization's weakening of labor does indeed extend to unions (Dumont et al. 2006). However, it is important to remember that bargaining power is issue-specific, and that unions are not to be underestimated in their flexibility.

It is well established that the effect of unions is not simply to represent workers in the marketplace, but to act as an interest group shaping the actions of the state towards the benefit of the working class. Unions have been credited with the formation of many of the welfare states of Western Europe (Korpi 1983, Esping-Andersen 1990, Hicks 1999). Furthermore, several authors have shown that it is a strong labor movement that prevents government retrenchment of welfare spending due to globalization (Garrett 1998, Hicks 1999). Rudra argued that globalization has had a greater negative impact on labor in the developing world, in spite of the predictions of the Heckscher-Ohlin model, because they lack strong trade unions to prevent a decline in social spending in the face of globalization (2002). On the other hand, Rueda argues that Social

Democratic parties in Europe, considered by some as the political arm of organized labor, have abandoned “the most vulnerable sectors of the labor market (61, 2005),” by maintaining their policy preference for employment protection despite rampant unemployment. Thus, Rueda argues, they have perpetrated a system benefiting insider over outsider labor interests. Nevertheless, Rueda has also found union density to be the single best cross-national predictor of equality in a society (Rueda and Pontusson 2000).

As a number of authors have pointed out, unionization may, unfortunately, be in decline as a result of globalization (Scruggs and Lange 2003, Magnani and Prentice 2003, Lee 2005, Dreher and Gaston 2007, Hessami & Baskaran 2013), though this too is contested (Beladi, Chao, and Holla 2011). As such globalization may be undermining union bargaining power in a fifth, and more direct, way by contracting their membership. While certainly of concern, this effect will not be further explored in this analysis.

Win Wage Gains and Promote Job Security

In their classic treatise on trade unionism, The History of Trade Unionism, Webb and Webb describe a trade union as “a continuous association of wage-earners for the purpose of maintaining or improving the conditions of their working lives (1950 [1894]).” The Webbs expand on this idea in Industrial Democracy, in which they describe trade unionism as the extension of democracy from the political to the industrial sphere (1902 [1897]). Through collective negotiation, workers are able to avoid competition amongst themselves, thus overcoming, to a certain extent, the inequality of bargaining power in negotiations between the factors of production and allowing workers to regulate their workplace (Webb and Webb 1950 [1894]). Overall, the Webbs contend that unions achieve improved conditions for their members through collective bargaining and by pressing for legislation favoring their interest (Flanders

1968). The Webbs' insight that trade unions represent the interests of labor in two spheres is essential for our purposes.

There exists a substantial variation in theories of trade unionism. For example, Karl Marx believed that trade unions could do little to improve the conditions of workers: "the costs which they cause the workers are mostly greater than the rise in the gains they want to get. In the long run they cannot withstand the laws of competition (1847, 435)." He argued that the value of trade unions is as a means of uniting the working class, in preparation to overthrow the capitalist system. On the other, Tannenbaum believed trade unions to be non-revolutionary. Their role was not to challenge capitalism, but to tame it (1966 [1921]). Perlman similarly believed that trade unionism's role is bread and butter issues, "controlling the job," and not transforming society (McIlroy 1995, 55). These disparate conceptualizations of unions were reconciled by Hoxie, who distinguished three types of unions: ideological unions intent on political action, business unions focused on work place conditions and wages, and friendly unions which seek mutual betterment of general welfare (Hoxie 1977 [1917]). Despite the assortment of proposed purposes, unions are seen in this text in the same manner as the Webbs did: associations of wage earners working to improve the conditions of their members through the market and through the state.

Wage-earners have a wide variety of interests, and thus trade unions have a wide variety of interests. Child labor laws, the minimum wage, paid vacations, employer health care, pensions, and health and safety standards are all policies resulting in part from union activism. However, in materialist terms, most union activities can be seen as working to improve the income and stability of workers' lives. As one author put it when describing trade unionism in Great Britain following World War Two, trade union goals are "primarily to win wage gains and

promote job security for their members (Gourevitch et al. 1984, 18).” It is through situating trade unions within this materialistic context that the following theory arises.

Theory: Same Ends, Different Means

As discussed above, by decreasing the bargaining power of labor, globalization is expected to undermine the ability of the union to increase compensation and to statutorily protect their members from unemployment. However, the effect of globalization on labor's bargaining power can be mitigated by two essential factors. First, since skilled labor is relatively scarce internationally, it faces less of a threat of outsourcing and of competition than from unskilled labor.⁴ This has been found to result in skill-biased inequality if unchecked (Pavcnik 2011). Nevertheless, if unions can effectively increase the relative skill of their workforce, they will retain the bargaining power necessary to demand compensation and employment protection. Secondly, low cost labor is not the only source of comparative advantage that an economy may possess. There are a variety of characteristics of any economy that can render it more or less productive, thus influencing a firm's willingness to pay higher wages for equivalent labor (Boix 2011). The World Bank's Ease of Doing Business Index includes ten criteria to assess the overall quality of an economy, none of which involves labor costs⁵ (2013), indicating that there are a number of ways to improve the productive capacity of the economy without decreasing wages. One of these core characteristics is the quality of infrastructure.

Regardless of the challenges, trade unions are going to continue to strive towards the improvement of the welfare of their members. As Webb and Webb described, unions are capable of negotiation, both in the market and in the political arena. I argue that, in the face of globalization, unions will use their ability to lobby the government to secure investment in

⁴ Adam Smith holds that skill is "the acquired and useful abilities of all the inhabitants or members of the society (2010 [1776], 461)." I would argue, however, that level of skill is defined by its scarcity, not by a workers absolute knowhow. Having a high school degree qualified one as high skill in the United States in the early 20th century (Noah 2012) but would not qualify one as skilled labor today (Goldin and Katz 2007). Therefore, stating that skilled labor is relatively scarce is redundant; however, it remains prevalent in the literature.

⁵ However, the World Bank used to include labor market flexibility in the index. It was removed from their standard due to pressure from the ILO to comply with international labor standards (ITUC 2006).

productivity improvements, particularly through human capital and infrastructure, which will strengthen their bargaining position and allow them to demand the compensations and job security their member's desire. Yet, even with productivity improvements, I maintain unions are not, in the face of globalization, fully capable of protecting their members from unemployment or to pressure the government to do so on their behalf. Consequently, I conclude that unions will increase their emphasis on unemployment insurance to maintain the welfare of members during periods of redundancy.

Cross National Time Series Analysis Methodology

A Few Minor Heroic Assumptions

The theory proposed involves a number of hypotheses about the preferences of unions towards certain economic and political outcomes which lend themselves to a cross-national analysis. (1) Unions have a preference for increased compensation for labor. Globalization decreases the ability of unions to bring about this outcome. (2) Unions have a preference for employment security. Globalization decreases the ability of unions to bring about this outcome. (3) Globalization increases the importance that unions place on job training. (4) Globalization augments the importance that unions place on infrastructure investment. (5) Globalization increases the lobbying efforts of unions for unemployment insurance.

However, while these are testable hypotheses they are not *easily* testable. There is no dataset of union strategies and preferences. No one has measured union opinion of unemployment insurance over time. For these reasons, an in depth analysis of a single case, that of trade unions in the United Kingdom, is appropriate. Yet, these limitations do not preclude the possibility of a cross-national analysis, if one is willing to make a few minor heroic assumptions.

It is not beyond reason to argue that where unions are “stronger,” governments are more likely to adopt policies that unions prefer. Therefore, if one were to find a correlation between union strength and a policy outcome, it would be indicative of union’s preference for that policy. Furthermore, if globalization were shown to change the correlation between union strength and an outcome, this would be symptomatic of globalization causing a change in union ability or preference for that policy.

This is a bold assumption for a number of reasons. First and foremost, there are a wide variety of factors that enter into the adoption of a policy, and to use outcomes as a measure of preferences and strategy is only a second-best solution. There is a range of other explanations

which might manifest in a correlation between “union strength” and a policy. For example, “union-busting” policies would be congruent with the presence of unions (the medicine is most common amongst the sick), and one would certainly be remiss to assign “union-busting” the label of a union preference. This is especially troubling because it is possible, and not historically inaccurate,⁶ to argue that unions could be opposed to government involvement in the labor market for the benefit of the working class, as the creation of a universal benefit would undermine the need for the union to negotiate for members directly. Thus, employment protection or unemployment benefits could, with a little imagination, be considered a “union-busting” policy. Evidence to address this concern will be provided in the case studies, but for the time being, it can only be acknowledged as a limitation.

A further concern is that strong unions have a highly endogenous relationship with strong parties of the left, and thus it is not unreasonable to argue that globalization’s effect on union strength is in truth an effect on social democratic parties. This concern is addressed, to a certain degree, with a control for government ideology. Additionally, the presence of strong unions tends to be correlated with the presence of strong employer associations. Any policy outcome attributed to strong unions may be the result of strong employer associations. This effect is addressed somewhat by controlling for level of wage coordination – which should partially control for a positive correlation of labor with strong employer associations. Finally, there is the eternal threat of omitted variable bias. This issue will be managed through the inclusion of key controls; however, tackling this concern is limited by the boundary of ignorance of the author.

Acknowledging these concerns, one might still draw evidence from a cross-national analysis. With this in mind, a country-year fixed effects OLS linear model is adopted to estimate

⁶ In the early twentieth century in the United States, a number of unions were resistant to minimum wage laws, as it was believed that wages should be set by the union and not by the government, and that “universal” benefits would undermine the need for a union. Unions in the United States have since reversed their position on this issue.

the impact of unions on policy outcomes, and, in turn, how globalization has changed this impact. Globalization's impact will be assessed by examining the interactive effects of union strength and globalization on the outcomes of interest.

Rich and Free

One of the major practical limitations of the analysis is the availability of data on union strength. Drawing from the "Data Base on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts (ICTWSS)" developed by Jelle Visser (2011), observations are available for 46 industrialized nations. This dataset includes all OECD and EU member states, thus allowing for the inclusion of nearly all, if not all, nations that match the theoretical scope of the research described below.

The key theoretical scope condition is whether or not a government allows unions to form and take action in both the political and market settings. Where unions are merely a proxy for the state (North Korea being an extreme example) or where unions are prevented from forming altogether, there is no way for them to take an active role in the economy or policy formation as described in theory. For this reason, only countries that are considered to provide the "Right to Association" in both the market and the government (with only minor restrictions⁷) are included. Measures of right to association in the market and in the government are available in the ICTWSS dataset. Observation exclusion is done year by year, so that fluctuations in association policy will determine whether or not a country is included.

While evidence indicates that economic globalization may result in decreased bargaining power of labor even in developing countries (Beladi et al. 2011), the most common argument for economic globalization's detrimental effects on labor remains the Heckscher-Ohlin model. As discussed previously, this model argues that globalization hinders the returns to labor only in

⁷ "E.g., recognition procedures, thresholds, only military, judiciary or police excluded (Visser 2011, 6)."

economies which are relatively capital abundant (Kremer and Maskin 2001). Therefore, analysis is further limited to “rich countries.” Only those countries that are considered “high income” by the World Bank in 2012 were included in the dataset (World Bank 2012). For this reason, no conclusions drawn in this paper can be applied outside of this limited scope.

These two considerations generate a dataset of 30 countries, with observations beginning in 1970 and continuing until 2009. It is important to note that data availability and inclusion for these 30 nations varies by year. The total number of country-year observations that meet the scope conditions, and for which union strength and globalization data are available, is 819. However, as data availability for dependent variables and controls varies, fewer than the total 819 observations are included in each analysis. The country-years included in this data set are listed in the appendix.

Variable Overview

The relation between globalization and union strength is analyzed for a total of twelve individual policy outcomes. Additionally twelve control variables, capturing five conceptual controls, are included. Descriptive statistics for all independent variables (as well as dependent variables) used in analysis are available in the Appendix. Explanatory and control variables are described in the following section. The measures of outcomes are delineated in subsections dedicated to their individual analysis.

Explanatory Variables:

Globalization

In this work, globalization refers only to economic globalization. This term is intended to capture the process by which international markets are becoming increasingly interconnected. There are a number of components that make up economic globalization. The primary division, for theoretical purposes, is between the mobility of capital across borders and trade in goods &

services. This division is theoretically significant as there is a difference in the causal mechanisms through which these two forms of economic globalization decrease the bargaining power of labor. Yet, in spite of this fact, for practical purposes, the anticipated impacts of economic globalization are sufficiently similar to justify analysis of the two dimensions concurrently.

A third form of economic globalization which, despite being increasingly relevant, is largely ignored by this work is mobility of labor, i.e. immigration. This is overlooked for three reasons. Firstly, the relationship between immigration and labor unions is even more complex than that anticipated for other forms of economic globalization, making its inclusion unwieldy. Secondly, mobility of labor, while increasing in recent years, has not been deregulated to the extent that capital accounts or trade have been. Thirdly, even if labor were able to move across borders without legal restraint, the factor of labor is still less willing to abandon its communities and homes than its inanimate counterparts.

An additional method of subdividing economic globalization is between the level of restrictions on the flows of goods, services, and capital across border and actual flows. Both of these have theoretically relevant and distinct impacts on labor. A decline in restrictions can reduce labor's bargaining power, even without accompanying actual flows, as the threat of outsourcing or lower priced foreign goods is enough to weaken labor even if the actual outsourcing & trade does not occur. Conversely, even if restrictions remain constant, there can be a substantial increase in globalization due to new technology, changing norms, or the entry of large economies (such as the BRICS⁸) into the global market. Thus, both the level of restrictions and actual flows is essential to the overall concept and impact of economic globalization. While

⁸ Brazil, Russia, India, China, and South Africa.

measuring their impacts separately is feasible, a single more comprehensive measure is both adequate and analytically more useful.

Axel Dreher has developed an index measure of economic globalization, known as the KOF index, which captures both the level of restrictions and actual flows of goods, services, and capital (2006). This measure has been widely used in the literature (e.g. Potrafke 2009, Tarrow 2011, Hessami & Baskaran 2013). While it does obstruct differentiation of the effects of capital mobility and trade competition, given the large number of dependent variables there is considerable practical value to using a single established measure.

The index runs from 0 to 100, with 0 indicating an absolute autarky and 100 a completely open economy. Within the limited scope of nations under analysis,⁹ the mean globalization score is 70.3 and the median is 72.6. The index is right-skewed, indicating a possibility of outliers. As Figure 1 indicates, Japan has been a relatively consistent outlier, with more than 1.5 times the interquartile range below the median for 30 out of the 41 years in observation. This is somewhat counterintuitive, as foreign trade has played a large role in Japan's economic rise. However, Japan has had, and continues to have, some of the lowest levels of FDI investment, lowest levels of imports for consumption, and highest hidden trade barriers and capital account restrictions in the OECD (Jones and Yoon 2006). As there is a risk of Japan unduly influencing the statistical results, data have been re-examined excluding Japan. While these results are included in the regression tables summarizing the results of each analysis, the exclusion of Japan was not found to shift the outcome of any of the model substantially.

INSERT FIGURE 1

⁹ Rich countries, with freedom of association, and data on both union density and union centralization.

Union Strength

Union strength, as conceptualized here, is the *absolute* (not relative) bargaining power of unions. Union strength is thus the resources and organizational capacity through which unions achieve outcomes in negotiations which are favorable to the interest of their membership. There are a wide variety of factors that influence the strength of unions: popular opinion, ties to politicians, the financial resources at a union's disposal, government policies, and the tenacity of the membership, among many others. This wide range of dimensions is simplified here as the product of union density and centralization.

Using union density or centralization to capture these various attributes of unions is certainly blunt. However, it is not without some merit. The percent of the working population who are members of a union is expected to be linked to popular sentiments about unions, the probability of government connections, the amount of dues that can be collected, and the favorability of policies towards unionization. As such, union density is a stand-in for the overall resources that unions have at their disposal. Using density as a proxy for union strength is quite common (Golden and Wallerstein 2011, Metcalf 2009, Fiorito and Maranto 1987). However, to improve upon this, the centralization of unions is also taken into account. The centralization of unions is theorized to capture the ability of unions to wield effectively the influence their membership endows them. It is a measure of the organizational capacity of the union, and is considered by some a better measure of union strength than density (Oskarsson 2003). Therefore, an indicator created by combining union density and centralization is adopted here to capture the full concept of union strength. This product measure of centralization and union density has previously been used in the literature to capture the idea of union strength (Iversen 2001).

As discussed, the data to create the measure of union strength is drawn from the ICTWSS (2011). Union density is the percent of the total population employed who are members of any

union. Union density thus falls on a 0 – 100 scale. The mean union density of the observations within the established scope is 40.8, ranging from a minimum of 7.3 to a maximum of 87.4. The standard deviation of the sample is 19.2. The measure of centralization, also taken from the ICTWSS, is based on an index developed by Iversen (1999), which weighs “the degree of authority or vertical coordination in the union movement with the degree of external and internal unity, and union concentration or horizontal coordination, taking account of multiple levels at which [wage] bargaining can take place and assuming a non-zero division of union authority over different levels (Visser 2011, 20).” This measure was originally developed to assess wage bargaining, but is an effective indicator of overall institutional centralization. The measure itself varies from 0-1, but to place it on a comparable scale to union density is multiplied by 100. The mean of the centralization index is 39.6, ranging from 8.3 to 97.8, with a standard deviation of 19.0.

To create the measure of union strength, union density is multiplied by union centralization. The resultant indicator ranges from 1.57 to 64.94, with a mean of 17.81 and a standard deviation of 13.72. As can be seen in figure 2, this measure is left-skewed, which is likely, in part, a manifestation of a real skew of union strength internationally compounded by the method by which the index was created. To compensate for this skew, analysis was attempted using the log of union strength. However, as this did not make the models substantially more predictive (measured by R^2) the use of the log was abandoned.

INSERT FIGURE 2

Control Variables:

Fixed Effects

As can be observed in figure 1, globalization has been consistently on the rise for the last 40 years. In contrast, union strength has been on the decline since the late 70s. The temporal

correlation between these two variables, without well-established causality, may influence results. Furthermore, as the level of globalization in Japan illustrates, these variables tend to be sticky. Countries with low levels of globalization will tend to have continuously low levels over time. A similar pattern is observable with union strength. A number of the dependent variables might also be relatively slow-changing. For example, one would not expect a 50% increase in wages in a single year. As this analysis uses country-year observations, results may simply indicate trends over time or between countries if not controlled for country and year. With this in mind, the most significant control in the model is the use of country-year fixed effects. A dummy variable is created for each nation and each year.

Each state has created its own unique relationship with unions during the last century; each has its own economic structure, its own resource endowments, its own political system, etc. A fixed country effects is a blunt, but effective, tool to capture the variety of nation specific attributes, and to help diminish the risk of omitted variable bias, though it certainly does not completely extinguish their possible presence. Similarly, a number of changes have occurred over time that cannot be adequately controlled for: new technology, the end of the Cold War, the rise of neo-liberalism, etc. Again, the time fixed effects help to mitigate these concerns. Fixed effect models are not without their criticism, but for the purposes here, the benefits outweigh the cost.

Limitations on the availability of data for a number of the controls and outcome variables have an adverse effect on the sample size. For that reason, results are tested for robustness by using just the fixed effects model, without controls to maximize the number of observations. These results are included with the regression tables of each analysis, but were only found to

affect significantly the results in the case of infrastructure (internet access and registered take-offs).

Wage Coordination

Wage coordination is intended to control for variations in institutional arrangements between capital and labor. It is well-established that different institutional arrangements of capitalist economies result in different responses to globalization (Hall and Soskice, 2001). The main source of variation in this literature is the level of collaboration between the state, organized labor, and employers' associations. Nations with high levels of coordination tend to have strong labor movements and powerful employer associations. As a result, the measure of union strength may simply be capturing variations in type of capitalist system or the presence of strong employer associations.

The inclusion of wage coordination also helps to mitigate the impact of how "encompassing" the nation's unions are. Encompassing unions are thought to be more attuned to the overall state of the economy than narrow unions. They are expected to be more willing to restrain the demands of their members for the overall welfare of the economy. This is not to say that encompassing unions betray their members' interests, but rather that their interests are more in line with overall national interests. As Mancur Olson (1982) theorized, an encompassing organization is one in which the membership represent a large share of a nation's population. Because it represents such a substantial portion of the nation, it tends to internalize a lot of the negative externalities a narrow organization might create in its place. For example, if union demands for increased wages were to lead to inflation, the benefits of higher wages may be higher than the cost of inflation for a sectoral union, but would be detrimental for an encompassing organization. Overall, "Encompassing organizations have some incentive to make the society in which they operate more prosperous, and an incentive to redistribute income to

their members with as little excess burden as possible, and to cease such redistribution unless the amount redistributed is substantial in relation to the social cost of the redistribution (Olson 1982, 53).” As a result, regardless of globalization, encompassing unions are expected to be more willing to restrain compensation demands and invest in productivity.

Union density and centralization are not just a measure of union strength; they are also a measure of encompassingness. Therefore, it is important to limit the possibility that the models are merely capturing the effects of encompassingness. Wage coordination is an important part of the theorized effect of encompassingness (Ahlquist 2010). As such, one can, at least partially, control for the effects of encompassingness by controlling for wage coordination. This measure is drawn from the same ICTWSS dataset from which the union strength measure is constructed (2011). The structure of the measure is originally taken from the work of Lane Kenworthy (2001). It is a five point scale in which a score of one indicates wage bargaining is done at the enterprise level and a score of five indicating economy-wide bargaining.

Regime Ideology

Strong labor movements are often associated with parties of the left: the Labour Party in the UK, the Democrats in the United States, and the Social Democrats in Sweden. As such, it is possible that variations in union strength are actually capturing variations in the strength of Leftist regimes. For this reason a control for the ideological position of the executive, drawn from Beck et al.’s *Database of Political Institutions (2001)*, is included. This measure indicates only if the executive is affiliated with the “left,” “right,” or “center.” As it is a strictly ordinal variable, it is replaced with two dummy variables, indicating “left” and “center” in analysis.

Technological Change

One of the most prominent counter arguments to the claim that globalization is causing a decline in the bargaining power of labor, is that this observed deterioration is the result of

technological change. The argument is twofold. One version is that technology is capital augmenting, meaning that it is increasing the demand for capital more than it does for labor (Rousseau 2008). For example, imagine that a \$1000 computer allows a graduate student to run statistical analyses in five minutes, as compared to the hours upon hours it would take to perform the equations by hand. The result would be a declining demand for labor and an increase in the demand for capital. The immediate effect of technological change tends to favor capital. However, according to economic theory, in the long run labor is a complement to capital, and therefore increasingly productive capital is thought to have no durable impact on returns to the factors of production (Acemoglu 2003). Nevertheless, a number of papers have found that technological change has a more significant negative impact on outcomes related to labor, such as labor share and level of equality, than globalization has (Guscina 2007, IMF 2007, European Commission 2007, Meschi and Vivarelli 2009). A second version of the technological change argument is that, since the 1980s, technology has complemented skilled labor, reducing the relative demand for unskilled labor (Stockhammer 2009). This in turn would decrease the bargaining power of unions of unskilled workers.

This paper does not refute the effects of technological change on the bargaining power of labor. However, as globalization and technological change have occurred over similar time periods (Stockhammer 2009), and in fact can be considered interrelated (Noah 2012), the possibility of spurious correlation is real. To control for this, a measure of technological change is included. As the type of technological change considered to be favoring capital and skill is largely information and communication technology (ICT), a common measure used to capture the effects of technological change has been the level of ICT in the economy (IMF 2007, European Commission 2007, Guscina 2007, Stockhammer 2009).

Using data from the World Bank and UNESCO, among other source, Castellacci and Natera, have created a dataset entitled CANA of “national systems, growth, and development (2011).” This dataset includes a number of variables, such as quality of infrastructure and level of education. It also includes a measure of “revenue from the provision of telecommunications services, such as fixed-line, mobile, and data” as a percent of GDP (2011).¹⁰ It is this measure that is included in an attempt to control for technological change.

Deindustrialization

For the last four decades, employment in manufacturing as a share of total employment in rich countries has been on the decline. This industrial decline is called by some “deindustrialization.” As manufacturing has long been the backbone of the labor movement, and the service sector has traditionally been more difficult to unionize, deindustrialization has an independent effect on what unions can demand. There are three dominant explanations for deindustrialization: “(1) rising consumer affluence and its propensity to increase demand for services more than for manufactured goods, (2) faster productivity growth in the manufacturing sector relative to other sectors, and (3) expanding trade linkages between the North and the South of the global economy (Kollmeyer 2009).”

If the third of these causes were the sole driver of deindustrialization, there would be no need to control for it. The theory described above dictated that globalization would result in deindustrialization (due to outsourcing). However, to ensure that the effects are from globalization, and not one of the other sources of declining manufacturing, it is important to control for deindustrialization. Therefore a measure of the percent of the economy in

¹⁰ This dataset uses multiple imputations to generate missing data, which is a common characteristic of data included in the dataset. Castellacci performed analysis on the imputations to ensure the quality of the imputation and only those which passed Castellacci’s tests are included in this work. However, it should be remembered that generated data is never as valid as actual measured data, and is only used in the absence of a reasonable alternative.

manufacturing is included in the analysis. This indicator is drawn from the OECD database (OECD 2013).

Exposure to Globalization

Globalization affects nations differently, depending on the pre-existing conditions of the economy. One of these conditions is the relative prevalence of sectors of the economy particularly exposed to globalization. Manufacturing is significantly affected by globalization, as it both competes with foreign producers, and can be outsourced. Some sectors are exposed to trade competition without the possibility of outsourcing due to practical constraints, such as mining or agriculture. A few industries have traditionally been immune to globalization, but have recently faced increasing foreign competition, such as the service sector (Noah 2012). Finally, some sectors are, to this day, particularly difficult to outsource and trade. Construction is one such sector. Historically, the relative exposure of sectors to globalization has been key to understanding the responses of unions (Swenson 1991). For this reason, measures of the percent of GDP derived from nine different sectors of the economy are included. These industries are manufacturing, mining, agriculture, utilities, construction, hospitality, distribution, finance, and services. These data are taken from the OECD database (OECD 2013).¹¹

Competitive Advantage

As described in the theory section, the effect of globalization is hypothesized to be dependent on the competitive advantage of an economy due to its quality of human capital and infrastructure. To capture the quality of human capital, a measure of the mean year of schooling completed by those over 14 is included; this variable is drawn from the CANA dataset. To measure the quality of infrastructure, three measures are used: The production of power plants in

¹¹ The inclusion of these controls is only necessary if one assumes a relatively low level of capital liquidity. If firms can easily move between sectors, they can avoid exposure to negative forces of globalization. Some authors have argued that globalization may be one of the key causes of the recent rise of finance (Krippner 2012).

kWh per capita,¹² the number of telephone subscribers per 1000 inhabitants, and the percentage of roads which are paved.¹³ Together these three measures of infrastructure represent the quality of the infrastructure within the nation. The infrastructure measures are also drawn from the CANA dataset.

Two other measures of infrastructure are available in the CANA data set: percent of population with access to the internet and the number of take-offs of airplanes registered to the country of interest per 1000 inhabitants. Neither of these variables can be used as controls, for different reasons. The internet did not become prevalent until the 1990s, and data only go back until 1990. As such, including it as a control would decrease the sample size by a decade or more of country-years. The number of take-offs, on the other hand, cannot be used because this concept is too closely related to globalization. However, these two variables, along with power consumption,¹⁴ can be used as measures of infrastructure outcomes.

¹² This is less transmission, distribution, and transformation losses and own use by heat and power plants.

¹³ Paved roads are those surfaced with crushed stone (macadam) and hydrocarbon binder or bituminized agents, with concrete, or with cobblestones, as a percentage of all the country's roads, measured in length.

¹⁴ When power consumption is used as a dependent variable, it will no longer be included as an explanatory variable.

Cross National Time Series Analysis Results

Win Wage Gain: Labor Share

The proxy used for the compensation of labor is the percent of total revenue that goes to the factor of labor; i.e. wages as a percent of GNI. This indicator, also known as “labor share,” has previously been used as a measure of the impact of unions on wages (Aldcroft & Oliver 2000, 86). That labor share captures the relationship between returns to factors, rather than simply the absolute value of compensation, makes it a particularly useful measure. A booming economy might cause compensation to rise for both the worker and the employer, but if it were to increase substantially more for the employer, this would indicate that the employer is in a superior bargaining position. A measure of labor share is available from the OECD (2013). As labor share is a percent of the revenue for all sales that goes to pay a worker; it can technically range from 0-100, but in practice ranges from 45.9% (New Zealand in 2001) to 98.5% (Austria in 1978). The median labor share is 68.3%. Descriptive statistics for this and all subsequent dependent variables are available in the appendix. As figure 3 illustrates, labor share has been in decline since the 1970s.

INSERT FIGURE 3

It is reasonable to be unconcerned with differentiating between union and non-union labor share, as there is evidence that strong unions drive up wages even for those unaffiliated with the union (Noah 2012). This is especially true when union established wages are extended to non-union members through covering laws as is particularly common in France (Nickell et al. 2002). It is somewhat more problematic that labor share includes many individuals typically unaffiliated with unions who tend to have high incomes without the intervention of organized labor, such as doctors, lawyers, and CEOs. However, I am unconvinced that the prevalence of

these professions is sufficiently correlated with union strength or globalization to invalidate the results of this analysis.

It is well established in the literature that globalization decreases labor share and that union density increases labor share (Lee and Jayadev 2005). As table 1 shows, without an interaction term this effect was still maintained. A one standard deviation increase in union strength is predicted to increase labor share by more than 5%, with a high level of statistical significance ($p < 0.001$).¹⁵ A one standard deviation increase in globalization on the other hand is predicted to decrease labor share by one percent ($p = 0.07$). What is interesting for the theory, however, is whether or not globalization decreases the effect of union strength on labor share.

INSERT TABLE 1

As one can observe in the table, after the inclusion of interactive effects a one point increase in globalization *increases* labor share by 0.17% ($p < 0.001$), while a one point increase in union strength – in the case of complete autarky – increases labor share by 1.06% ($p < 0.001$). However, complete autarky does not and will never exist. Due to the statistically significant ($p < 0.001$) interactive effects, when globalization is at its median, union strength will result in only a 0.22% increase in labor share.¹⁶ In other words, as globalization increases, the effect of union strength decreases; just as predicated by theory. A one point increase in globalization decreases the effect of a one point increase in union strength by 0.012.

As globalization and union strength are both indexes, “a one point increase” has little meaning in the real world. Therefore, it is more practical to understand the effect of these

¹⁵ For simplicities sake, p values are used in the text to describe the quality of the estimate. 95% confidence intervals can be found in the tables.

¹⁶ For all dependent variables, *the conditional coefficient of union strength* when globalization is at its min, first quartile, median, third quartile, and max levels can be found in the Appendix. Also included in the Appendix is *the conditional effect of a one standard deviation increase in union strength* as well as the standardized conditional effect of one standard deviation increase in union strength.

variables by discussing the influence of a “one standard deviation increase.” One can reinterpret what has been already illustrated through this method. Including interactive effects, the impact of a one standard deviation increase in globalization¹⁷ in the absence of any unions, is to increase the share of income going to labor by 2.7% ($p < 0.001$).¹⁸ On the other hand, in the absence of any globalization, a one percent rise in union strength¹⁹ is expected to result in 10.8% increase in labor share ($p < 0.001$). Again, with a high level of statistical significance it is predicted that as globalization increases, the effect of union strength declines. At the first quartile level of globalization, the effect of a one standard deviation increase in union strength falls by more than half, to 5.0% and by the median it is only 2.9%.²⁰ When globalization reaches 91.6, which it did for 17.9% of countries in 2008, union strength, as modeled here, begins to have a *negative correlation* with labor share. Therefore, while globalization itself has a positive impact on labor share, through its effect on union strength its aggregate impact can be negative – depending on the strength of unions. This declining impact of union strength when conditioned by globalization can be seen clearly in Figure 4.

INSERT FIGURE 4

Furthermore, when one overlaps this effect with the distribution of globalization, as shown in figure 4, one sees that for a large portion of the sample, globalization is dramatically decreasing the effect of union strength of labor share. In conclusion, it appears that globalization does decrease the bargaining power of labor in its relative demands for compensation. This effect

¹⁷ This is calculated by multiplying the coefficient estimate of globalization by the standard deviation of globalization (15.5).

¹⁸ All p values less than 0.001 are recorded at $p < 0.001$, regardless of how much more significant than that level they are. All p-value above 0.001 are rounded to two significant digits.

¹⁹ This is calculated by multiplying the coefficient estimate of union strength by the standard deviation of union strength (13.3).

²⁰ This is calculated by adding the coefficient of the interaction term multiplied by the level of globalization in question to the coefficient estimate of union strength, and then multiplying this sum by the standard deviation of union strength (13.3).

withstood the exclusion of Japan from the dataset, as well as the exclusion of controls (though when controls are excluded, globalization is found to always have a negative effect on labor share).

Promote Job Security

It is expected that as a result of globalization, the ability of unions to achieve government protection of labor from unemployment will decline. To test this effect, measures of the level of government-mandated severance pay and advance notice before termination are analyzed. As severance pay and advance notice tend to vary with the length of employment, measures are available for those who have been employed for 9 months, 4 years, and 20 years. However, due to the fact that for 82.4% of country-year observations, severance pay after 9 months of service is nothing, nearly all the variance in severance pay after 9 months is explained simply by using pooled time-series data ($R^2 = 0.9998$). Therefore, analysis of severance pay is done only at 4 years and 20 years. Data for these measures are drawn from a recent IMF database developed by Aleksynska and Schindler (2011). These measures capture the total number of months of pay, or notice, which it is legally mandated that a fulltime employee receive upon termination.

Additionally, the effects of union strength and globalization on overall unemployment rate are tested. Unemployment rate is admittedly a broad measure with a vast number of possible mechanisms at play. However, the unemployment rate also allows for a broad assessment of the impact of trade unions on employment security, and their overall ability to bring about their preference of full employment. While a number of economists argue that employment will decline as a result of union strength (Hirsh 2008, Snower 1995, Friedman and Friedman 1990), this idea is still debated (Egger 2002). Regardless, employment security is a

stated objective of most unions (Gourevitch et al. 1984)²¹, and it is anticipated that globalization decreases the ability of unions to obtain this goal. As such, even if unions are expected to increase unemployment, globalization is expected to cause them to increase unemployment more. Data on unemployment rates are available from the International Labor Organization database (ILO 2013). The total rate of unemployment for both genders is used.

Severance Pay

Neither globalization nor union strength has a statistically significant effect on severance pay, at 4 years without interactive effects. However, once one takes into account the interactive relationship between globalization and union strength, union strength begins to have a highly statistically significant ($p < 0.001$) positive effect on severance pay. Globalization has no measurable impact (95% confidence interval includes 0, $p = 0.19$), but the interactive effect is highly significant ($p < 0.001$). Thus indicating that globalization does have an effect through its impact on severance pay, as predicted by theory. These effects can all be observed in table 2.

INSERT TABLE 2

To avoid redundancy, discussion of the estimated effects shall be limited to presentation of the impact of a standard deviation change in union strength or globalization. In contrast, table 2 and all of the subsequent regression tables, present the original estimates of the coefficients without any alteration to ease understanding.

A one standard deviation increase in union strength, with globalization at its lowest observed value, would result in eight and a half more days of severance pay.²² However, when globalization is at its mean, a one standard deviation rise is predicated to increase severance pay by only half a day, and after globalization reaches a score 73.9 (approximately the 54th

²¹ Though arguably only for their members (Rueda 2005).

²² Months were converted to days by multiplying by 365 and dividing by 12.

percentile) union strength begins to have a *negative* impact on severance pay after 4 years. The effect of globalization on the impact of union strength can be seen in figure 5.

INSERT FIGURE 5

A very similar relationship is observed with severance pay after 20 years. However, unlike at 4 years, union strength has a statistically significant positive effect ($p = 0.018$) at 20 years even without controlling for interactive effects; a one standard deviation increasing expected severance pay by 15.3 days. While globalization does have a negative effect, this effect is insignificant. Furthermore, as was seen with severance pay at 4 years, globalization makes the effect of union strength even more significant, both statistically ($p < 0.001$) and substantively: a one standard deviation increase in union strength, in an autarky, will result in 50.4 more days of severance pay. Table 3 shows the estimated effects of this model.

INSERT TABLE 3

As figure 6 illustrates, the interaction effect itself is negative and statistically significant ($p=0.004$), upholding theory. When globalization is at its mean, the effect of a one standard deviation increase in union strength decreases to only 10.1 more days of severance pay. When globalization reaches 87.9, union strength is predicted to begin to have a negative effect on severance pay.

INSERT FIGURE 6

Advance notice

As table 4 indicates, both globalization and union strength are found to have a statistically significant ($p = 0.015$ and $p < 0.001$, respectively) *negative* effect on the amount of time statutorily required between a person being told that he or she is going to be laid off and actually being out of work, if they have been employed for only 9 months. However, as predicated, this relationship changes when interactive effects are taken into account. Union

strength has a *positive* effect on advance notice ($p = 0.0028$), though, as predicted by theory, globalization decreases this effect ($p < 0.001$).

INSERT TABLE 4

In fact, already at the 3rd percentile level of globalization, union strength begins to have a negative effect as a result of globalization. Globalization itself, however, no longer has a statistically significant effect. This indicates, possibly, that much of globalization's impact is through its effect on the bargaining power of labor, as theory suggests. However, as figure 7 makes apparent, given the very low rate of globalization at which union strength begins to have a negative effect, it appears that while globalization may be making unions less capable (or active) in achieving more notice for those who have worked for nine months (as theory predicts), this was never that high a priority for unions to begin with.²³

INSERT FIGURE 7

Furthermore, as figure 7 shows, for those who have been employed for more than 4 years or 20 years, the effects of union strength and globalization are quite different. In both models (table 5 & table 6), without interaction effects, globalization and union strength have negative effects on the amount of statutory advance notice that an employee is required to receive. In addition, there appears to be very little interaction, as both globalization and union strength's effects remain negative. In the 4 year model, the interaction term is statistically insignificant, and any effect is all but absent. In the 20 year model, while the interaction effect is statistically significant ($p = 0.0011$), the effect is contrary to expectation, and globalization must be in the 99.5th percentile to cause union strength to begin to have a positive effect. Furthermore, all of observed relationships are robust to the exclusion of Japan and of the controls.

²³ This is somewhat contradicted in the case study of unions in the United Kingdom. Several times members made reference to increasing employment protection being necessary from day one.

INSERT TABLE 5**INSERT TABLE 6**

This evidence does not fit with the hypothesized relationship, but more bizarrely it does not correspond with the results from the analysis of severance pay. As both measures are developed to capture the same concept – employment protection – this indicates a possible disconnect between concept and indicator. One possible way to explain these results is that strong unions are capable of negotiating duration of advance notice effectively in the market, and thus are less dependent on the state to enact these regulations into law. However, this fails to explain the divergent results with severance pay, as such logic could apply equally well to that form of protection. One might argue that unions are less concerned with when employees are told they are going to be terminated, than with giving an employee protection during periods of unemployment. Furthermore, it is possible that while globalization is decreasing the ability of trade unions to prevent unemployment, it is not decreasing their desire to prevent unemployment.²⁴ Of the five measures of statutory employment protection, an argument can be made that advance notice for those, who have been employed for 4 or more years, is the least onerous on employers and thus the least likely to fall victim to increasing calls for labor market flexibility.

Unemployment Rate

Contrary to Milton Friedman's expectations (Friedman and Friedman 1990), unions are found to decrease unemployment (table 7).²⁵

²⁴ This is, as will be seen, upheld by evidence from the case study of manufacturing unions in the UK.

²⁵ Due to the specific controls used, and the fact that this paper utilizes a measure of union strength which includes centralization, it is a bit ambitious to deem Mr. Friedman wrong from this analysis alone. However, since the direction of the effect remains true even when excluding all controls (except for fixed effects) or using union density rather than union strength, one might begin to be so bold. The effect also remains true when not using fixed effects at all (for both strength and density). It is only when one excludes controls and uses union density rather than strength that unions increase unemployment.

INSERT TABLE 7

A one standard deviation increase in union strength is expected to decrease unemployment by 2.24% ($p < 0.001$). As expected, globalization increases unemployment. A one standard deviation increase in globalization is predicted to result in a 1.30% ($p = 0.0026$) increase in the unemployment rate. However, including an interaction effect provides evidence that globalization's negative impact on employment is through the effect of globalization on the bargaining power of labor. As table 7 shows, the direct effect of globalization on unemployment evaporates ($p = 0.75$) with the inclusion of an interaction term, while its interactive effect is highly significant ($p = 0.0055$). A one standard deviation increase in union strength is predicted to decrease the unemployment rate by 2.58% at the first quartile level of globalization, but at the third quartile level it would decrease unemployment by only 1.54%. The effect of union strength on unemployment at various level of globalization can be observed in figure 8.

INSERT FIGURE 8

Competitive Advantage

Training

The first, and most important, of the two methods by which unions are expected to be working to increase productivity, and thus bargaining power, is through human capital investment. The OECD (2013) has, since 1985, been gathering data on government expenditure to train and retrain the workforce. This measure includes funding for workplace training, training at educational institutions, and apprenticeship programs. The funding included in this indicator is targeted, meaning that it is created to deal with issues of unemployment, obsolescence, and risk of involuntary job loss. These active labor market policies more directly reflect how governments might compensate for the effects of globalization than would general educational expenditure. This expenditure is recorded as a percent of GDP, and therefore is unsurprisingly

small. The mean expenditure on these types of programs is 0.23% of total GDP. It is expected that unions, without globalization, care little for these training programs, as they can depend on protected jobs and negotiated wages. However, when forced into competition due to globalization, they will increase their demand for these training programs. Thus, unlike the expectation for interaction terms up until this point, the interaction term in this model is expected to be positive.

INSERT TABLE 8

As table 8 makes clear, a one standard deviation increase in globalization (without interaction effects) increases investment in these programs by 0.13% of total government expenditure ($p < 0.001$) – that is more than half the mean level of expenditure on these programs. Without interaction effects, union strength has no relationship with the funding for these programs ($p = 0.68$). However, once interactive effects are included, these relationships change entirely. Globalization no longer has a statistically significant effect ($p = 0.72$), while union strength has a highly significant effect ($p < 0.001$), as does the interaction term ($p < 0.001$). Until globalization reaches 61.27 (30th percentile), union strength decreases the predicted expenditure on training programs, but after this point union strength has an increasingly positive impact. This effect can be observed in figure 9, which shows that as globalization increases so does the effect of union strength on investment in training. Overall, this result is robust and upholds theory.

INSERT FIGURE 9

Infrastructure

As no measure of infrastructure expenditure was available, the less direct measure of actual quality of infrastructure is used in its place. Given the opaqueness of such a measure, three different indicators are used: the production of power plants in kWh per capita, the percent of the

population with access to the internet, and number of take-offs of airplanes registered to the country per 1000 inhabitants. All these measures are drawn from the CANA dataset.

While these measures are selected in hopes of capturing the concept of investment in infrastructure, they are admittedly limited. There are a wide variety of infrastructure investments that can be made in an economy, and selecting these three is as much a matter of data opportunism as theoretical justification. However, each of these variables allows for certain benefits when assessing the impact on infrastructure of globalization and union strength. The historical novelty of the internet allows for higher levels of variation than well-established infrastructure – such as roads. The relative ease of increasing energy production and its lack of a ceiling allows the level of energy production to act as a stand-in for rapid change in infrastructure. Finally, the number of take-offs registered to a nation is an indication of its quality of transnational transportation; an essential component of infrastructure for international competitiveness.

Power

Without taking into account interactive effects, both union strength and globalization had positive impacts on power production.

INSERT TABLE 9

As shown in table 9, a one standard deviation increase in union strength is expected to cause a 329 increase in kWh produced per person ($p = 0.02$), and one standard deviation increase in globalization is predicted to result in a 655 kWh per capita ($p < 0.001$) increase.²⁶ However, globalization no longer has a statistically significant effect, when an interaction term is included ($p = 0.59$). Nonetheless, both the interaction term and union strength are significant ($p < 0.001$). Furthermore, the interaction term is positive, upholding theory.

²⁶ Mean energy production is 8327 kWh per capita.

INSERT FIGURE 10

As illustrated in figure 10, union strength has a negative effect on power production, when globalization is below 49.11 (the 9th percentile). However, when globalization reaches its median, a one standard deviation increase in union strength is predicted to increase power production by 640 kWh per capita. The results of this model are robust to exclusion of controls.

Internet

Given that the internet did not become prevalent until the late 20th century, and data goes back only to 1990, this measure has some limitations, especially in sample size (N = 451). On the other hand, as a recent technology, there is much more opportunity for variation in its adoption, making it a valuable indicator of investment in infrastructure – particularly in OECD countries where things such as paved roads are already quite prevalent.

INSERT FIGURE 11

Figure 11 shows the gradual adoption of the internet, but also the wide range of availability that continues to exist.²⁷

INSERT TABLE 10

Neither globalization nor union strength have a statistically significant effect on the availability of internet access, without interactive effects ($p = 0.48$ and 0.43 respectively). As table 10 shows, both measures become more significant when an interaction term is included ($p = 0.21$ and $p = 0.10$ respectively), though they still do not reach the standard $p < 0.05$ threshold. The interaction effect is also not statistically significant ($p = 0.10$).

INSERT FIGURE 12

However, as figure 12 makes clear, the interaction term is pointing in the direction that is expected: as globalization increases, the effect of union strength on internet access increases.

²⁷ Note, this measure can only be used due to the inclusion of time fixed effects.

Additionally, while the interaction term is not “statistically significant,” its 95% confidence interval just barely includes zero (-0.00243, 0.0256). Furthermore, without an interaction effect, union strength is estimated to be positive, but with the interaction effect, whether or not union strength has a positive or negative effect becomes dependent on the level of globalization. By these, admittedly shaky, estimates, when globalization is at its mean, a one standard deviation increase in union strength results in a 2.4% increase in the percent of the population with internet access, but when globalization reaches its third quartile, union strength will result in a 3.8% increase in internet access. When controls are removed to increase the size of the n, globalization, union strength, and their interaction term all become statistically significant at the $p < 0.001$ level, maintaining the directions observed in the larger model. Furthermore, when Japan is removed from the model, all variables maintain direction and become more significant.²⁸

Planes

Without interactive effects, globalization and union strength have statistically significant negative effects ($p < 0.001$ and $p = 0.003$ respectively) on the number of registered takeoffs per 1000 people. As can be seen in table 11, when interaction effects are accounted for both estimates maintain direction and increase in significance ($p < 0.001$ for both).

INSERT TABLE 11

Furthermore, the interaction term is in the predicted direction, meaning that globalization is predicted to make the effect of union strength on the number of flights registered in the country increasingly positive ($p = 0.005$), as can be seen in figure 13. However, globalization has to be very high (96th percentile) for union strength to begin to have a positive overall effect on the number of takeoffs. This threshold is a far greater than one would expect. So while globalization

²⁸ Union strength ($p = 0.13$), globalization ($p = 0.070$), interaction effect ($p = 0.068$).

does seem to increase union preference for air travel infrastructure, there appears to be some other factor involved which makes unions opposed to air travel infrastructure in general. It should be noted that this was the only dependent variable for which the exclusion of controls changed the sign of the interaction effect.

INSERT FIGURE 13

Maintaining Labor's Welfare: Unemployment Insurance

The OECD has collected data of government expenditure on unemployment benefits since 1985. This measure is the total amount of government expenditure on out-of-work income maintenance and support, as a percent of GDP. This concept encompasses six dimensions here described by the OECD:

8.1.1 Unemployment insurance refers to benefits payable to workers satisfying criteria or membership in an unemployment insurance scheme. These are often paid only for a limited period.

8.1.2 Unemployment assistance refers to benefits payable to workers either failing to satisfy criteria for membership in an unemployment insurance scheme or who have exceeded the period for entitlement to unemployment insurance benefit. Unemployment assistance is normally means tested.

8.2 Partial unemployment benefits refer to benefits compensating for the loss of wage or salary due to shorttime working arrangements, and/or intermittent work schedules, where the employer/employee relationship continues.

8.3 Part-time unemployment benefits refer to benefits paid to persons working part-time who have lost a fulltime job or an additional part-time one and are seeking to work more hours.

8.4 Redundancy compensation refer to capital sums paid from public funds to employees who have been dismissed through no fault of their own by an enterprise that is ceasing or cutting down its activities.

8.5 Bankruptcy compensation refers to capital sums paid from public funds to employees to compensate for wages not paid by the employer due to bankruptcy/insolvency. (OECD 2013)

This measure thus encompasses the key aspects of unemployment benefits that unions might demand. The most any government spends on unemployment benefits is Denmark, which in 1993 spent 4.79% of GDP on unemployment benefits. The median amount spent is around 1.06% of GDP. The only country in the dataset which spent less than 0.005% of GDP (recorded as 0) on unemployment benefits was Poland, which did so in 1993.

Excluding interactive effects, both union strength and globalization have positive impacts on unemployment benefits. A one standard deviation increase in globalization is predicted to increase government expenditure on unemployment benefits by 0.70% ($p < 0.001$) of GDP. This follows closely with Rodrik's theory that as labor is weakened by globalization, the government steps in to ease the transition (1994). Union strength also has a positive impact on unemployment benefits, with a one standard deviation increase in union strength estimated to result in a 0.19% of GDP increase in expenditure; however, this effect is not statistically significant.

INSERT TABLE 12

As table 12 indicates, the inclusion of the interaction term has the anticipated effect. Globalization continues to have a positive impact on unemployment benefits, with a one standard deviation rise resulting in a 0.237% increase in expenditure as a percent of GDP; however, this effect is no longer statistically significant. Nevertheless, globalization does have a statistically significant effect on the impact of union strength, as the interaction term is statistically significant ($p < 0.01$). Furthermore, this effect, as illustrated in figure 14, is positive, conforming to the theory. At low levels of globalization, union strength actually has a negative impact on expenditure ($p = 0.0017$); this occurs until globalization reaches 53.5 (the 16th percentile level of globalization). However, as indicated in figure 8, when globalization increases so does the effect of union strength, and when globalization reaches its maximum, the effect of union strength is to increase government expenditure on unemployment benefits by 0.8%. In other words, increasing it by 75% of the median.

INSERT FIGURE 14

Cross National Conclusion

Five bargaining outcomes essential to theory were explored: compensation for labor, employment protection, human capital investment, infrastructure, and unemployment insurance. It was anticipated that globalization would decrease labor's ability to negotiate effectively for employment protection and compensation, and as a result labor unions would choose to focus on training, infrastructure, and insurance. With some anomalies, this is what was observed. As figure 15 summarizes, globalization caused the impact of union strength to decline on the measure of compensation and the majority of measures of employment protection.

INSERT FIGURE 15

In turn, globalization also caused the effect of union strength on training, infrastructure, and unemployment benefits to increase. Taking into account the heroic assumptions discussed in the Methods Section, the difficulty of interpreting interactive effects, and the idiosyncrasy of advance notice for four and twenty years of service, the evidence presented here supports theory.

Case Study: A Manufacturing Union in the United Kingdom

The results of the cross-national analysis are a valuable but limited piece of evidence for the theory. From that analysis, one can state with some confidence that globalization is correlated with a change in the effect of strong unions on the labor market and on labor market policy outcomes. The observed congruence of increasing globalization and a greater negative correlation of strong unions with labor share, employment rate, and some measures of statutory employment protection indicates that globalization undermines the ability of unions to achieve compensation and employment security either in the market or through the state. Similarly, the observed correlation of increasing globalization and a greater positive effect of strong unions on training, infrastructure, and unemployment benefits are suggestive of unions placing more emphasis on accomplishing these ends. These observations establish a degree of external validity for the theory. In a probabilistic sense, the major outcomes of the theory have been upheld most of the time. Nonetheless, can one then use this evidence to say that as a result of globalization unions are changing their policy positions? Without strengthening the internal validity of the argument, I would be hesitant to do so.

Unions are not inanimate forces, they are associations of people. These people keep records. They publish documents. They can pick up a phone and answer your questions. They have websites. For example, the Irish Congress of Trade Unions states on their website: “The free market model of globalisation that is being promoted is focussed [sic] on the needs of business, particularly large-scale multinational companies, not on the needs of ordinary people. Workers everywhere are seeing an erosion of their job security, working conditions, and wages. Hard-won rights to organise trade unions and negotiate collectively with management are being undermined (2013).” These kinds of stated positions are abundant and allow for a real examination of the microfoundations of this theory.

The cross-national study, presented above, helps to establish that the hypothesized association between globalization and union strategy is present internationally. However, what is important now is to establish that this is in fact the relationship described by theory: unions are shifting their preferences towards productivity improvements and insurance. To establish these microfoundations, a case study of unions in the manufacturing sector of the British economy is presented. Additionally, to further establish congruence, a “most-similar different-outcome” comparison is performed with the construction sector. This nation and these sectors are selected deliberately.

INSERT TABLE 13

The manufacturing and construction unions of the United Kingdom represent a least-likely case for preferring wages tied to productivity without the effects of outside competition. As table 13 shows, the average scores in the United Kingdom for union centralization and wage coordination are ranked near the bottom of the sample – 32 out of 34 for centralization and 27 out of 34 for coordination. As such, unions are very unlikely to be adopting the characteristics of encompassingness, which as discussed previously, tend to lead to concern over the status of the overall economy and lead to wage restraint and pressure for productivity improvement.²⁹ British trade unions are renowned for their lack of encompassing behavior. As one British trade unionist remarked, “In point of fact, the TUC³⁰ doesn’t have any powers. It’s a federation, and all its members are autonomous (Gormley, Bogdanor 2012)”

INSERT TABLE 14

However, if the theory is correct, the manufacturing sector is a most-likely industry within the British economy to be adopting productivity improvements in the face of

²⁹ Some argue that the origin of such encompassing unions is global competition (Swenson 1991). However, to analyze such an argument would change the scope and nature of this research.

³⁰ The British trade union confederation.

globalization. As table 14 shows, 29.2% of all FDI outflows between 1985 and 2008 in the British economy were from manufacturing, making it the number one sector in terms of outflows. Similarly, in 2010, more than 30% of all imports were of manufactured goods (table 15).

INSERT TABLE 15

It has been demonstrated “that imports from low-wage countries are associated with a decline in the relative demand, and a fall in the wage-bill share, for less-skilled labour within UK manufacturing sectors (Anderton and Brenton 2002, 282).” Economic globalization, as figure 16 illustrates, has increased in the United Kingdom since 1970, as it has in most other rich countries included in the sample. If globalization were to cause any union in the United Kingdom to adopt skills, infrastructure, and unemployment insurance as their objective, it would be the manufacturing union.

INSERT FIGURE 16

In contrast, the construction sector of the British economy is the second lowest in terms of total FDI outflows between 1985 & 2008, followed only by agriculture. Less than 1% of imports in 2010 were in construction. This makes sense, as it is far easier to import a car than it is to import a house. Lacking the attribute of encompassingness and exposure to globalization, unions in the construction sector are a “least likely” case within the British economy, and within most economies of the world, to change their position on such issues as a result of globalization.

Examining unions in industries at these two ends of the spectrum allows one to adopt a Mill’s method of most similar different outcome. They are both part of the same economy, they

both survived Thatcherism, and surprisingly they have seen similar declines in labor input³¹ during the last two decades (figure 17), to some extent controlling for the non-globalization effects of deindustrialization. As such, if one were to observe increased demands for productivity gains and public services, as well as fewer demands centered on wages, benefits, and employment protection from manufacturing unions, but not see the same behavior from construction unions, it would be evidence of an effect of globalization.

INSERT FIGURE 17

However, selecting unions for this case study, despite this clear criterion, is challenging due to the large number of mergers that have taken place in recent years and the propensity of UK unions towards general unions.³² To choose unions to represent these sectors, the member unions of the Trades Union Congress of the United Kingdom were examined.³³ One of the principal sources of the analysis is the records of this organization, so therefore only unions within this Congress were considered. Choosing a trade union to reflect construction workers is simple. The Union of Construction, Allied Trades, and Technicians (UCATT) has represented this sector since 1971. In contrast, the union that most represents manufacturing is “Unite the Union” (Unite). This is problematic for three reasons. First, Unite was founded in 2007 as the result of a merger between two of the UK’s largest unions: Amicus and the Transport and General Workers Union. Amicus in turn is the result of a 2001 merger of the two largest manufacturing unions: Amalgamated Engineering and Electrical Union (AEEU), and Manufacturing Science Finance (MSF). As such, longitudinal research is impossible as the organizational structure and industrial membership changed over time. Furthermore, due to this

³¹ Labor input is measured as the number of hours worked per unit output.

³² General unions are those trade unions which do not limit membership to a specific sector. They are not to be confused with union confederations which are associations of trade unions.

³³ A complete list of their membership is available in the appendix.

gradual consolidation of trade unions, Unite has emerged as the largest union in the UK with 1.5 million members, thus comprising a fourth of the total unionists affiliated with TUC. This is compared to the 84,000 members of UCATT. Third, and finally, Unite does not just represent manufacturing, although a third of its membership is in manufacturing. It is a general union with members employed in all sectors, including construction.

Unite's size and its general membership make it particularly susceptible to the behavior of an encompassing union, which happens to be the behavior expected of a manufacturing union exposed to globalization. During the analysis of documents, this must, and will be taken into account. While this is a limitation, it is also an opportunity. Due to its size, Unite has different leadership, campaigns, and resources for the construction and manufacturing sectors. These can be compared; showing that even within a single union there is variation by sector consistent with the theory.

A number of sources of information are used in this case study. First, a brief overview of the history of unions in the UK and changes in the British labor force allows for contextualization of the subsequent analysis. Second, as strikes are a major component of the bargaining power of unions, strike data from 1967 to 2000 is assessed by sector and by cause of the strike. Third, sixteen years of transcripts, motions, and "composites" of the annual Trades Union Congress conference are analyzed to observe differences in what policies UCATT and Unite (as well as its predecessors) prioritize and to assess their respective perspectives on globalization. Fourth, a brief examination of Unite specifically, and the differences between its construction and manufacturing sectors, help to control for the possibility that the position of Unite at the Congress are the effect of its relative level of encompassingness. Finally, an

interview with the leader of manufacturing in Unite is done to solidify the microfoundations of theory.

Labor in Defense: A Brief History of the British Labor Movement

The United Kingdom boasts one of the oldest, if not the oldest, organized labor movement in the world. Current labor associations have their roots in the mid-19th century with the rise of craft unions of skilled workers, such as printers and engineers. The movement expanded in the 1890s to include unskilled and semi-skilled labor, and by the early 20th century to also incorporate professional and white collar workers (ICTUR 2005). As figure 18 indicates, union density consistently rose for much of the 20th century.

INSERT FIGURE 18

This is, at least in part, the result of the 1906 Trade Disputes Act which gave trade unions immunity from liability stemming from strike actions which strengthened the rights of unions to picket peacefully (Wrigley 2002). By 1977, more than half of all workers were a member of a union. However, this majority lasted for only four years, and beginning in 1978 trade union membership began a steep decline in membership that continues to this day. In 2009 only 27.5% of all workers were members of a trade union. It is often argued that this is the result of the negative perception of unions arising from the “Winter of Discontent” combined with the political actions taken to curtail the power of unions under the regime of the *Iron Lady*, Margaret Thatcher (Bogdanor 2012). However, as the OECD average union density has followed a very similar pattern (figure 18), it appears that broader forces, such as globalization (Hessami & Baskaran 2013) may be at work.

Before the Great Depression, trade unions in the United Kingdom were dedicated to the policy of firm level negotiation, and were largely resistant to state intervention. The 1896 Conciliation Act and the Industrial Courts Act of 1919 did allow for governments to act as

intermediaries, but only when both labor and management agreed to involve the state (Wrigley 2002). However, in the post-war era, trade unions feared that the end of the war might bring a return to depression level unemployment and growth. Thanks to increasing union membership and a war chest which provided the bulk of Labour Party funds (Wrigley 2003), the government was willing to consult the unions, and specifically TUC, in the establishment of economic policy. The trade unions in turn pushed for Keynesian state intervention in the economy. However, unlike the trade unions of Scandinavia or the Continent, unions in the United Kingdom were unwilling to allow the government to establish compulsory arbitration or mandatory incomes policies (Gourevitch et al. 1981).

This did not mean that TUC was unwilling to negotiate wage restraint with the government. Concerned over inflation, in the 1950s and early 1960s the Trades Union Congress and its member organizations did indeed accept that wage gains must be tied to productivity improvements (Bogdanor 2012). However, by the late 1960s, with the cost of living having consistently risen faster than wages, trade unions began to defect from the official TUC policy, and labor disputes over wages began to rise (Wrigley 2003). The inability of TUC to restrain the behavior of its members is unsurprising. Due to longevity (founded in 1868) and cohesion (since the end of WW1 it has rarely represented less than 75% of all unions), TUC is granted considerable authority; nevertheless, it has never had a *direct* role in bargaining and its powers over members unions are extremely limited (ICTUR 2005). Furthermore, even if TUC was able to continue to restrain wages without challenge, by the end of the 60s, it was increasingly unwilling to do so. In his 1968 address at the TUC conference, the organization's president stated "I am sure that negotiators will make even greater progress in the field [of wage negotiation] if the Government shows that their attitude to settlements is not so rigid that no

productivity payments are permissible until the higher productivity is seen to be there. To lay down inelastic criteria is to stifle productivity talk at the bargaining table before it begins.

Sometimes a little priming of the pump is necessary... (TUC 1968).”

In 1970, the Conservatives took control of government, and in 1971, largely as a result of an inability to negotiate wage restraint with unions, they passed the Labour Relations Act and began to set statutory incomes policy (Wrigley 2003). The low level of growth that the British economy experienced between the end of the war and the 1980s, when compared to its European competitors, was increasingly blamed on the “British Disease” of strong unionism. This was in spite of a government commission finding that the rate of strikes in the UK was middling in comparison to other rich nations – including many outperforming the UK (Wrigley 2003). The suppression of wages relative to the cost of living led to a decade of increasing labor conflict. This ultimately culminated in the 1978-1979 “Winter of Discontent,” in which the underpaid refuse, hospital, transport, and public sector employees went on strike due to pay caps instituted by the *Labour Party* (ICTUR 2005). During 1979, approximately *150,000 working years*³⁴ were lost due to strikes.³⁵ The public memory of coffins piling in the streets, parks turned into landfills, and cancer patients refused care, shifted public opinion of organized labor and led to the rise of Margaret Thatcher’s Conservative administration in 1979 (Bogdanor 2012).

The Thatcher regime passed several pieces of legislation to restrain the power of unions. These included making it easier for workers to refuse to join trade unions, placing limits on picketing, increasing regulation of union elections and finances, making it easier for employers to get injunctions against strikes, and making unions legally liable for any unofficial industrial action that the union did not publicly repudiate (Siebert 1997). “By 1990 the closed union shop

³⁴ “Working days lost” divided by 260.7.

³⁵ Calculated from statistics made available by the Office for National Statistics of the British Government.

and secondary strikes were effectively abolished (Siebert 1997, 43).” TUC was excluded from the “corridors of power,” reducing its lobbying power to the lowest levels it had experienced since the 1930s (Marchington et al. 2004). The decline in union density and number of work days lost is often attributed to the effects of Thatcherism; however, this decline was in accordance with the international trend of the same period making it debatable what the real cause was (Wrigley 2003). Regardless, it was 18 years before a Labour government again ruled Britain, and during those two decades union density fell from 52% to 31% (ICTWSS 2011). In 1997, when the Conservative government fell, the President of TUC said: “That dark age came to an end on May 1st... Almost overnight the climate in the UK changed. People were actually smiling a bit more. Some of the fear and insecurity has been replaced by hope and a boost for the morale of ordinary people... (TUC 1997).”

Unfortunately, the demise of Thatcherism did not bring the resurgence that the labor movement had hoped for. New legislation was passed to empower and protect unions, such as the 1999 Employment Relations Act that made the practice of blacklisting illegal (ICTUR 2005). However, union density has continued to decline, albeit at a slower pace (ICTWSS 2011). It appears that the major forces leading to the decline in unionization rates are the fall of manufacturing and the inability to organize effectively in the growth sectors of the economy (ICTUR 2005). Industry has declined faster in Great Britain since 1970 than in any other OECD country, and nearly 75% of the employed were classified as service workers in 2011 (Marchington et al. 2011).

Deindustrialization is not the only change in the British economy during the last half century. In 2011, forty percent of women were employed in the UK, significantly more than the European Union average. Temporary employment made up 6% of the workforce, and more than

a million people are currently employed by an “agency,” rather than directly by an employer. In addition, migrant labor has become increasingly common, partially as a result of increased integration into Europe.³⁶ Unemployment in the UK is one of the highest in the OECD (Marchington et al. 2011). Finally, between 1945 and 2000, the number of trade unions has fallen from 781 to 221 (Wrigley 2002). Discerning the effects of globalization amongst the upheaval of Thatcherism, deindustrialization, and rising precariousness is the goal of the following sections.

Labor in Dispute: Strike Behavior Since 1972

Labor strikes are an essential component of the bargaining power of labor. Without the ability to strike, labor is severely constrained in its leverage in negotiation with management. However, the reverse is also true; if labor is easily replicable through a vast reserve of unemployed workers, than strikes become ineffectual (Webb and Webb 1902 [1897]). By increasing the options open to capital in response to the collective actions of organized labor, globalization decreases the likelihood of strikes (Piazza 2005). The argument used in this literature is the same as that noted previously in the discussion of the causal mechanism of globalization: “globalization improves the relative bargaining position of capital to labor by allowing employers the opportunity to exit abroad or to demand concessions by claiming a ‘profit squeeze’ from increased international competition during negotiations with unions. In this scenario, unions, cognizant of their severely compromised bargaining position, are wary of strikes and opt to concede at the bargaining table in order to preserve domestic employment (Piazza 2005, 297).”

INSERT FIGURE 19

³⁶ Thus making the omission of immigration from the conceptualization of globalization problematic.

As discussed previously, days lost to labor disputes have declined in Great Britain between 1970 and 2000 (Wrigley 2002). As figure 19 shows, this trend has continued into the 21st century. Between 1978 and 1982, 2.4 total days were lost to strikes for every person employed in the UK. Yet, between 2008 and 2012, only 0.083 days were lost per worker. Given the number of factors at play during this period, it is most effective to observe the ratio of working days lost in manufacturing and construction per worker to the total working days lost per worker, as figure 20 presents.

INSERT FIGURE 20

Whereas working days lost per employee in manufacturing, as a ratio of total working days lost, has declined monotonically over time ($R^2 = 0.51$), the ratio for strikes in construction appears to be unrelated to time ($R^2 = 0.0089$). As globalization has been increasing over time, this effect is consistent with theory. One might argue that perhaps manufacturing unions are simply more capable of achieving their ends without strikes. However, between 1972 and 2012, the number of manufacturing workers declined by 73.4%, while the number of construction workers increased by 1.27% (ILO 2013). Furthermore, while labor share in manufacturing has experienced a downward trend between 1972 and 2010, construction's labor share has been on the rise (figure 21). In terms of both employment security and compensation, manufacturing is lagging behind construction.

INSERT FIGURE 21

It is fallacious to attribute directly changes over time to globalization, in spite of the distinct correlation between time and globalization ($R = 0.88$). Yet, looking specifically at the relationship between globalization and strike behavior is somewhat revealing in itself (figure 22).

INSERT FIGURE 22

As globalization increases, labor disputes (per worker in sector as a ratio to total per worker) in manufacturing first increased and then declined substantially, while labor disputes in construction declined initially and then increased substantially. This would correspond with labor in manufacturing being first undermined by globalization, and responding through strikes to demand higher wages and fewer redundancies, but then realizing its diminished bargaining position and thus the ineffectiveness of strikes, reducing its number of labor disputes.

One final piece of evidence can be drawn from labor dispute behavior indicating that manufacturing unions are aware of their decreasing bargaining power in regards compensation and employment protection. Drawing on the theory, one might hypothesize, that globalization undermines the ability of trade unions to demand increased wages and employment protection, but there is no theorized effect on strike behavior over trade union matters, such as union recognition and rights. As figure 23 shows, there has been little to no change in strikes over union matters in manufacturing as compared to the national standard. Unexpectedly, there has actually been a decline in the number of strikes over union matters in construction.³⁷

INSERT FIGURE 23

While the evidence presented in regards to strikes supports the overall idea that the bargaining power of manufacturing unions is in decline, it fails to provide compelling evidence that this is the result of globalization. Additionally, it provides no evidence that, in response, manufacturing unions are turning towards skill development, infrastructures, and government services. For that we look to the records of the Trades Union Congress.

³⁷ This may in part be due to the late organization of labor in construction (UCATT was founded in 1972) compared to other sectors. As such, the number of strikes early in this data set over union recognition and rights would be higher than those noted later on.

Labor in Dialogue: A Decade and a Half of Testimony

The Trades Union Congress hosts a conference annually in which delegates from its member unions gather to discuss the challenges, goals, and status of the labor movement in the United Kingdom, as well as arrive at a consensus as to the direction TUC and the movement are to take. An annual report is published from this convention which includes three components essential to the analysis. First, trade unions have the opportunity to present motions to the conference for debate. These documents have only one author associated with each issue. Second, the members of the Congress develop “composites,” which are jointly written policy proposals. These documents have an initial “mover,” a “seconder”, and any number of “supporters.” Finally, the report includes a transcript of all official statements made at the congress. While over a century of these records exist, only the most recent sixteen reports are available in a digital format (TUC 1997 – TUC 2012).³⁸

From these documents, every composite or motion affiliated with, or statement made by, the principal construction union, UCATT, and the principal manufacturing union, Unite, were analyzed and coded. In the case of Unite, due to the mergers which took place during this era, its predecessors were also assessed. This included Amicus (2002-2006), AEEU (1997-2001), and MSF (1997-2001). In total, the manufacturing unions in question put forward 37 motions; were the mover on 24 composites, the seconder on 15, a support of a further 15; and members of these unions made 276 comments. UCATT was responsible for 21 motions, was a mover on 12 composites, a seconder on 6, and a supporter of 17. Furthermore, UCATT members made 75 statements, 73% less than those made by manufacturing unions. Given the relative size of the

³⁸ It should be noted that, due to fragmentation of the documents and inconsistent posting, some of the years were missing various components. 2006 is missing the verbatim, but does include question and answers with the Prime Minister. 2005 and 2004 are both missing day three of the four day conference. 2003 is missing days 3 and 4, as well as the motions. 2002, 2000, and 1997 are missing the motions and the composites. Finally, while the 2001 document is intact, the conference was cut short on the third day as a result of the terrorist attacks that occurred in the United States on September 11th of that year.

construction union when compared to Unite and its predecessors, it is unsurprising that it was involved in fewer motions, composites, and statements.

The documents were coded as to whether they included discussion of eighteen concepts which are either essential to theory or were deemed prevalent enough to warrant discussion.

These concepts were:

1. Wages: Increases in salary.
2. Benefits: Any secondary benefits from employment. Examples include paid time off, pensions, public holidays, etc.
3. Health and Safety: The health and safety of employees at work.
4. Employment Protection: Regulations and measures taken to prevent unemployment.
5. Social Spending: Any government expenditure intended to promote the welfare of the population
6. Skills: Training, education, apprenticeships, and any other programming related to improving the level of human capital of the population.
7. Infrastructure: The development of transportation, energy, roads, or any such public good.
8. Productivity: Discussion of increasing efficiency, without discussion of skill development or infrastructure specifically.
9. Redistribution: Reference to increasing poverty and economic inequality, as well as the need to remedy it through the state.
10. International Competition: Any reference to the challenge posed by foreign competitors.
11. Other Globalization: Discussion of globalization without referral to international competition.
12. Sector Investment: Pressure for investment from the government in the sector in which the union is key (manufacturing and construction respectively).
13. International Labor Movement: Support for a global union or increased partnership with unions abroad.
14. Discrimination: Unequal pay, hiring practices, benefits, or any form of discrimination based on identity characteristics (gender, sexuality, disability).
15. Union Rights: The legal rights that enable organized labor.
16. Precariousness: The increasing use of agency workers, undocumented workers, and other employees who do not enjoy the benefits of full employment.
17. General Status of the Economy: The macro status of the economy in general, includes comments on inflation, wages, unemployment, etc.
18. Other Politics: All other politically relevant comments that did not fall into any of the above categories.

It was possible, and common, for documents to fall under a number of these categories. All motions and composites contained reference to at least one of these concepts. Only 10 of the 351 total statements assessed did not fit into any of the 18 categories, three of which were construction and seven manufacturing. It should be noted that I personally performed all coding, and was aware of which union made the comment/motion/composite at the time of coding. In spite of efforts to remain unprejudiced, I was aware of my theory during this process and therefore the possibility exists that the following results are biased. The total number of each

type of document involving each concept can be found in table 16, and what percent that is of that type of document is summarized in table 17.

INSERT TABLE 16

INSERT TABLE 17

As expected, manufacturing unions were far more likely to be concerned with international competition than construction unions. In the sample, members of construction unions only made statements on the topic of international competition once. Furthermore, this statement was in discussion of the debt bondage system of Pakistan, specifically regarding how children are being exploited to provide cheap products and services to the developed world; the statement did not emphasize the effect that this had on labor in the UK. In the 16 years of transcripts, UCATT representatives never once used the word globalisation. UCATT was a supporter of two composites that mentioned international competition and a mover on a third; however, this does not compare with manufacturing, for whom a full 24.3% of motions made reference to international competition, 20.8% of composites on which it was the mover focused on globalization, and 8.7% of comments made reference to the global market. In fact, a 2007 motion put forward by Unite was entitled “Manufacturing and Globalisation.” This result is unsurprising given the comparative exposure of the sectors to international markets.

There is abundant evidence for a connection between manufacturing’s concern over globalization and increasing productivity. While members of UCATT made no references to productivity, it was common place among the manufacturing unions. For example: “To improve the UK's relative international position we must innovate, innovate, innovate (Braddock, TUC 1998).”³⁹ “More than that, productivity and competitiveness must be industry's top priority

³⁹ As the TUC reports used are published online in sub-parts which, at times, entirely lack page numbers, and have been compiled by the author, the page numbers for quotes are unavailable.

(Jackdon, TUC 2001).” “We would be abrogating our responsibility if we did not alert Congress - and through Congress you and the Government - of the spectre of international competition and the very real need to compete effectively but more importantly in time (Buckley, TUC 2000).” “Our members we know want more job security, more job satisfaction. They know too that both of these goals require high productivity in the increasingly competitive global markets... (Lyons, TUC 1998).” That that chain leads to a demand for training is also clear. “In addition, we need the Government to introduce training within the scope of collective bargaining, where union recognitions provide for an obligation to negotiate with workplace reps in relation to training. We also have to remember that training is not just about improving productivity, but it is about our members’ future (Burke, TUC 2005).”

Members of manufacturing unions were more likely to mention the need for skills than for wages (1.16:1), for benefits (1.68:1), and for health and safety (2.85:1). Members of UCATT, on the other hand, were more likely to mention the latter three items than increased training (0.55, 0.61, and 0.61:1 respectively). 42% of all composites on which the manufacturing union was the mover discussed training. While it appears in table 17 that construction leaders were more likely than manufacturing unionists to mention skills (21.3% v 13.4%), this is largely due to the vast number of other matters that Unite and its predecessors discussed that construction unions did not. More than a fifth of manufacturing statements discussed discrimination, while no construction statements did.⁴⁰ Manufacturing was twice as likely to discuss “other politics” and more than five times more likely to discuss the economy in general. Therefore, if one limits

⁴⁰ The propensity to discuss discrimination may have to do with the changing nature of the British labor force, and the pressing need that manufacturing unions feel – compared to construction unions – to maintain their bargaining power through high union density.

discussion to five key concepts as table 18 does: wages & benefits,⁴¹ employment protection, social spending, skills, and infrastructure; one will observe that manufacturing unions were more likely to be involved in some way in a composite involving skills, more likely to make statements involving skills, and around three times as likely to put forward a motion discussing skills. A chi-squared test of both motions and statements shows that at the 95% confidence level, there is an association between the sector of the union and the prevalence of these five concepts.⁴²

INSERT TABLE 18

The relative support of manufacturing and construction unions for education can be seen clearly in figure 24.

INSERT FIGURE 24

Moreover, evidence for globalization as the cause of this increased desire for skill development can be found within the documents. The 2007 motion on “Manufacturing and Globalization” declared a need for the government to lift training support to a minimum NVQ level 3, if British manufacturing is to compete globally. In 2003 Danny Carigan, a representative from Amicus, stated: “Of course, they, like us in the TUC and the trade union Movement, recognise that skills training and the lifelong learning agenda are key drivers towards increasing productivity (TUC).” In 2005, Tony Burke⁴³ stated, “Each year at Congress we argue the case to improve our members’ skills and long-term futures, but the fact is that after years of urging

⁴¹ These are all statements/motions/composites that include discussion of wages or benefits. It is not simply adding the number of documents that included either of these factors, as that would include double counting document in the sum.

⁴² Given the variation in the relationship between being a mover, a seconder, and a supporter, and the ambiguity of from whom policies originate in these documents, which after all are composites of union positions; it is unsurprising that the evidence of association is weaker. However, it is worth noting, that the relative proportions still coincided with theory.

⁴³ The current member Unite’s executive committee in charge of manufacturing.

employers to pay for skills, we still have a long way to go to compete with our overseas competitors (TUC 2005).”

Those last two quotes touch on an unaddressed limitation of the theory. While manufacturing unions are abundantly concerned with skilling, they do not automatically presume that the state is the sole provider of this investment. They discuss the need for the government to increase training programs, but they also display a desire for the employers themselves to pay for the skilled workforce of which they are taking advantage.

Also visible in figure 24 is the relative priority that manufacturing placed on infrastructure compared to construction. The number of observations in terms of motions is much smaller than that for skill development. However, unlike construction, manufacturing did have a motion involving infrastructure, was twice as likely to have a composite on infrastructure, and four times as likely to have a statement related to infrastructure. Furthermore, it is possible to draw a line between manufacturing’s desire for infrastructure and globalization: “We need a strategic investment bank, using the assets that we already own, helping to re-balance the economy, with investment in public infrastructure, housing, communications, transport, within our struggling private sector, manufacturing and developing green technologies... Such measures would create thousands of decent, well paid stable jobs with skills that will rebuild our reputation as a nation for manufacturing and technological excellence (Burke, TUC 2011A).” However, the connection is not nearly as clear as that between globalization and training.

Similarly, there is evidence that unions in manufacturing are more concerned with social spending than those in the building industry. As figure 24 shows, manufacturing documents related to social spending made up a higher percent in all subgroups than it did for construction. However, this is likely, at least in part, to be due to the effect of manufacturing being more

concerned with the macro-economy in general.⁴⁴ As 41% of the statements in regards to social spending by the manufacturing union were from the period of the Great Recession and the waves of austerity in Europe (2008-2012), this possibility cannot be ruled out. For example, in 2009, one manufacturer stated: “Within the composite, if you have read it, it clearly says that we need to boost redundancy pay for the victims of the spivs,⁴⁵ our members who are losing their jobs. We are not asking for the megabucks which the spivs have had; we are just asking them for fair, decent redundancy pay linked to average earnings. That is not greed. That is fair and reasonable (TUC 2009).” However, unlike manufacturing unions who discuss redundancy pay directly, when construction unions mention redundancy pay, it is always in the context of a broader set of benefits afforded workers: “They [contract workers] are deprived of key employment rates and they have no sick pay, no redundancy pay and they get no State benefits (Lannon, TUC 2009).” “They [contract workers] are denied even the most basic employment rights meaning that they could be sacked without notice or reason, they do not receive redundancy pay, holiday pay, sick pay... (Guy, TUC 2011A).” “These employers do not want to be tied down with redundancy selection or unfair dismissal claims. They do not want to be bothered with employment rights and contracts of employment [with contract workers] (Ritchie, TUC 2005).”⁴⁶

Furthermore, every single one of these quotes refers to the use of payroll agencies and “bogus” self-employment. While manufacturing is concerned with international competition of globalization, construction is concerned with the domestic competition of precarious labor.

UCATT was twice as likely to have a composite, four times more likely to have a statement, and

⁴⁴ As noted, manufacturing unions were more than 5 times more likely to mention the economy in general than construction unions.

⁴⁵ Spiv is a British colloquialism referring to a petty criminal who deals in illicit goods. Here, however, the author is referring to the bankers whom he holds responsible for the recession and current redundancies, and whom he accuses of abuse of power and greed.

⁴⁶ Note, these three quotes are every time that the term “redundancy pay” is used by a member of UCATT at the conference between 1997 and 2012.

twelve times more likely to have a motion related to the increasing precariousness of the labor force.

While members of manufacturing unions were more likely to mention human capital than employment protection (1.68:1) in their statements, the ratio of statements involving skill to those about employment protection was actually higher for construction unions (3.2:1).

Similarly, the ratio of manufacturing mentions of wages and benefits to employment protection is 1.5:1; it is 4.5:2 for construction. This indicates the possibility that manufacturing unions might be more concerned than their building counterparts with employment security – contradicting theory. There is evidence for this. In 2003, Roger Lyons stated:

I rise to highlight one special serious issue that has been included in the composite, redundancy. Redundancy is the worst of times for any working people, not only does it ruin livelihoods, it damages self-confidence and blights whole communities. Skills and expertise are scattered to the four winds. With over 10,000 manufacturing jobs going every month, we have a right to know why redundancies are so popular with employers in this country as the first resort, not the last, and more than the same global employer who imposes it elsewhere in their European operations. The answer is simple. *It really is true that it is easier and cheaper to sack workers in Britain...* In the Netherlands, the employer has to prove that alternative options... In France, employers must negotiate at workplace level with proposals to retrain and otherwise mitigate any downsizing proposal... In Germany, employers must present a special plan agreed with the workers incorporating consideration of all alternative options to redundancies... In other words, they cannot sack their human capital as easily or as cheaply as here so companies chop away at their UK operations when the board wants cutbacks. We lose quality work, experienced workers, market share, and our manufacturing base erodes still further... We insist on a level playing field. It is intolerable yet it is so much easier to sack a British worker, and so much cheaper. Congress, let us update this clapped out 40-year redundancy pay formula and bring hope to those in despair. [Italics added] (TUC 2009)

This might explain the results of the large-n analysis, in which stronger unions resulted in more advance notice. Trade unionists have not given up in their fight for employment security; they may even have redoubled their efforts in the face of an increasing menace of unemployment due to globalization.

The evidence from comparison of these two sectors generally supports the theory that globalization leads to increased demands for productivity through skill and infrastructure, while simultaneously causing increased demand for social services. However, these documents also

reveal the myopia of the theory. There are a wide number of solutions that manufacturing is pushing for to combat globalization which are absent from the theorized strategy. Public procurement, using the government's purchasing power to shore up demand for British-made goods, is a regularly advised solution within these documents. Macroeconomic policies, including inflation and currency devaluation are actively debated in their effect on competitiveness. Increased diversity, given the changing demographics of the British labor force, is commonly addressed. Creating a global union, though often derided as impractical, is an actively pursued solution to the crisis in manufacturing. In fact, Unite has developed a partnership with the United Steelworkers⁴⁷ to bargain collectively with multinationals on both sides of the Atlantic (Unite 2013). Finally, the theory involved unions demanding increased investment in skill and redundancy insurance from the government; however, these unions still feel that employers should be forced to pay their fair share for a number of these measures, in addition to government support.

To varying degrees, the microfoundations have been established. However, there is the continuing concern that it is simply Unite's encompassing nature that is leading it to behave in a more productive and globally concerned manner. To compensate for this issue, we will now turn to an analysis of the construction and manufacturing subgroupings of Unite.

Labor in DisUNITEy: Same Union, Different Strategies

As discussed previously, Unite the Union is the United Kingdom's largest trade union with around 1.5 million members and is a general union with members in a broad spectrum of sectors including both manufacturing and construction. It represents workers in both the construction and manufacturing sectors, with a third of its membership in manufacturing. This immense organization was formed in 2007 as the result of the merger of the Transport and

⁴⁷ A US/Canadian trade union in manufacturing.

General Workers' Union and Amicus. Amicus in turn was the result of a 2001 merger of the Manufacturing, Science and Finance Union and Amalgamated Engineering and Electrical Union.

The union, as a whole, seems to place a great deal of importance on issues regarding globalization and skill development, as discussed previously. Unite has three official "Vision and Goals" which include "The International Vision," "The Education Vision," and "the Representation Vision":

The international vision

Unite's vision is not limited to the United Kingdom. It extends throughout Europe, and Unite has links with unions and governments across the globe. Never afraid to get the best we can out of Europe, Unite has set up more European Works Councils than any other union. Unite has also forged close alliances with other international unions and was a founder member of Workers' Uniting, the new international union established to combat the forces of globalisation.

The education vision

When it comes to education and training, Unite puts its money where its mouth is. Unite is fully committed to high quality training, enabling our representatives to serve members' needs at all times. Unite was the first union to open residential training colleges and has two centres training thousands of members each year, and all at no extra cost to Unite activists.
-Unite (2013a)

However, this does little to disaggregate the effects of construction and manufacturing and simply reinforces the already established claim that Unite, as the representative of manufacturing, is addressing the challenges of globalization.

Two principal sources of information are going to be used to discern the strategic preferences of construction and manufacturing within Unite. First, while a non-traditional source of information, the structure and resources of the subsections of the Unite website dedicated to each of these industries will be examined. This will include a brief discussion of the current campaigns in each industry. Second, both manufacturing and construction post on the website articles they find relevant to their constituency. Since 2005, construction has posted 90 articles and manufacturing has posted 206 articles. These will be examined for content, and analyzed, in much the same way as the TUC documents.

The subsections of the website for manufacturing and construction are quite different. Manufacturing includes sections on: key issues, Unite strategy, skills and training, global unions, news, Twitter feed, 2020 Vision, sectors, and blogs. Construction on the other hand includes: collective agreements, campaigns, news, useful link, Construction Skill Certification Scheme, Health and Safety Assessment, and blacklisting. The important dissimilarity here is that manufacturing includes a subsection for skills and training, while construction does not. This subsection discusses Unite's arrangements with employer associations to establish apprenticeships and training, how Unite has representatives on the Boards of Sector Skills Councils, and that it is involved with the Manufacturing Skills Alliance board of the Trades Union Congress. The closest to education that the construction section includes is a focus on how Unite assists members to become certified to government standards; a reactive, rather than a proactive, relationship to education.

The home page of the construction section states: "At the heart of our industrial activity is the core policy that Unite wants to see - all construction workers directly employed under the terms and conditions of the collective agreement relevant to their trade." The four components of collective agreements that are pushed hardest for construction are wages, correct travel allowances, over time rates, and competition from temporary workers. All policies are directly linked to compensation. No such emphasis on wages and benefits exists in the manufacturing section. In contrast, the key issues section for the manufacturing sector includes the publication *Manufacturing - 2020 Vision* (Unite 2011), which pushes for an interventionist government strategy involving "a revamping of skills and training; the need for a positive procurement policy based on

the purchase of UK manufactured goods; investment in research and development and the green economy etc.” They also share a link to *German Lessons* (2011b) – a publication of TUC spearheaded by Unite on manufacturing policy.

Both *German Lessons* and *Manufacturing – 2020 Vision* dedicate entire sections to training. These documents help to establish that manufacturing preference for training is derived from recognition that they must be productive if they are to compete in an international economy, and that it is, at least in part, the responsibility of the government to support this skill development and infrastructure (Unite 2011, 22-3).

Britain remains an engineering powerhouse, but it is suffering from crumbling infrastructure, a growing skills shortage and thirty years of neglect by successive governments. The coalition has been making all the right noises about rebalancing the economy, but these figures show the urgency with which they need to follow this up with firm, concrete action. This means boosting skills through high-level - not just low-skilled - apprenticeships, significantly increasing investment in our infrastructure and making the most out of our world-class knowledge economy by easing Intellectual Property rights registration (Unite 2011, 8).

The understanding that the UK must specialise in a number of targeted, high skill, high value manufacturing sectors where we are or could become competitive in the age of globalisation... government support must be aimed at these key sectors (TUC 2011b, 8-9).

Apprenticeships must form the cornerstone of industrial skills, and whilst we have a number of reservations, we wish to discuss the role of University Technical Colleges with the government (TUC 2011b, 9).

Furthermore, *German Lessons* emphasizes the need for the United Kingdom to have a strong “Social Market Economy,” in which economic efficiency and social justice are paramount, and the welfare state supports those hindered by the pursuit of productivity (TUC 2011b). Finally, and most importantly, *German Lessons* emphasizes the importance of wage moderation (TUC 2011b, 33), though at the same time calls for a minimum wage.

No such documents, calls for wage restraint, demands for government supported training or infrastructure, or emphasis on social spending can be found in the construction

subsection of the website. Instead, the key campaigns currently undertaken by Unite Construction are to ensure that workers receive wages and benefits within the full terms and conditions of sector negotiations and a movement to encourage increased investment in building projects (Unite 2013a). Admittedly, construction projects include infrastructure investments; however, the role of these projects is directly to increase construction jobs and without reference to efficiency or productivity (Get Britain Building 2013).

The news articles posted in each section of the website are telling. Since 2005, Manufacturing posted 206 articles to construction's 90.⁴⁸ Given that manufacturing makes up a third of Unite, this slight differential is unsurprising. As figure 25 clearly shows, articles posted by manufacturing were twice as likely to discuss productivity and training; on the other hand, construction articles were *five times* more likely to make reference to compensation. Furthermore, 23.3% of manufacturing articles dealt with unemployment (compared to 1 construction article), and 11.2% were in regards to globalization. This evidence supports the theory that due to globalization, and the resultant fear of job loss,⁴⁹ manufacturing is restraining its demands for compensation and instead focusing on skills and productivity improvement.

INSERT FIGURE 25

Overall, by showing that even *within* a union the relative exposure of a sector to globalization influences strategy, the evidence from Unite supports the theory.

⁴⁸ The Unite website went through renovation in 2012, updating the news feeds. However, the archived website is available with the news feeds going back to 2005. While the current website has a section dedicated to manufacturing, the archived one does not. Therefore, the news feeds of the shipbuilding, aerospace, electrical engineering, and metals manufacturing sections were used in the place of a manufacturing subsection.

⁴⁹ With subjects such as “Unite members working at electronics manufacturer Edwards are ‘devastated’ by the company's proposals to offshore 220 jobs (Unite 2013b).”

Labor in Person

A final effort is made to establish that globalization is the cause of changing strategies, at least in the British case, by directly contacting the leader of manufacturing in Unite. This conversation maintained the results found up to this point. When asked how globalization was impacting the manufacturing sector, this official stated: “Significantly. Significantly. The reality is that globalization means that a company that is not just a single country company, that has got opportunities outside the UK or US and will look to go where it's cheaper.” He said the former Soviet Union, China, India, and other “BRICS + 4” were challenging British workers for their jobs, as companies can threaten to move overseas. He also quoted Germany, Holland, and France as locations for outsourcing.

When asked how Unite was responding to the threat of globalization, he first discussed the creation of a global union.⁵⁰ However, the second strategy he focused on was productivity. He used the example of Ford moving a factory from the UK to Turkey. There was no way, he argued, for UK workers to compete with Turkish workers in terms of wages. “Nobody ever wins the race to the bottom, there is no bottom, it can always go lower, until the point where we pay employers to come to work.” Therefore, he argued they must focus on productivity, and they do so through the state: “We work with our political party, the Labour party in the UK, we look to create a skilled workforce. There is no point to having a semi-skilled workforce, you have got to have a high skilled if you are to be productive.” He further argued that the most important thing to provide those who have lost their jobs to globalization is retraining.

When asked what he believed the role of government should be, the representative stated: “The government has a major role, in retraining, in helping people find alternative employment, that when companies close down and there are mass redundancies, we expect them to step in and

⁵⁰ As opposed to a global union federation, a global union is a single organization.

help out... what we have got to do is continue to put pressure on [the government] to get people into alternative work... we are putting pressure on the government to have a proper industrial strategy, an interventionist strategy that creates employment. And when people do lose employment they get retraining opportunities.” These statements clearly show that unions are responding to globalization by flexing their political muscle, and that their strategy is directed towards skill development, but also services and investment.

The leader was asked to elaborate on his position on unemployment benefits. Interestingly, while the representative maintained that the government should be supporting benefits, and criticized the current regime for attempting to cut benefits, he brought the conversation back to training. He emphasized that the priority of Unite was getting people back to work, and stated that Unite was active politically in preventing the current government strategy of cutting benefits: “We also believe that jobs in the skilled area are much more important for people who want a future.” Finally, in regards to infrastructure, he commented, “We are arguing for interventionist infrastructure.” However, he again brought the conversation back to skill development: “They have got to invest locally, and they have got to invest in skills for the future.”

This interview maintained the argument that globalization is undermining manufacturing. It very strongly indicates that the response of unions, or at the very least Unite, is to push for increased investment in skill. Finally, it establishes that Unite is working towards improving benefits and infrastructure, though the evidence is not as substantial as that for overall pressure for increased productivity through training.

Discussion: Organized Labor in a Globalized World

Taking the evidence presented here in concert, it certainly does appear that globalization is changing the bargaining power of labor. It was argued that globalization is making unions unable to demand the level of compensation that they otherwise would due to the threat of outsourcing and competition from foreign production. In the cross-national analysis it was found that globalization did significantly decrease the effect of union strength on labor share. Strike data from the UK showed that labor disputes in manufacturing have declined considerably more than those in construction, relative to the strike behavior of unions as a whole, while one did not observe such a pattern in regards to strikes unrelated to wages or benefits. Within the TUC documents, the unexposed construction unionist was far more likely to discuss wages and benefits than his or her manufacturing compatriot. Within Unite, the construction sector published articles on wages far more frequently. Finally, the representative from manufacturing stated specifically that internationally mobile firms are seeking the lowest costs of production.

Similarly, the evidence maintains that unions are made less capable of defending their members from unemployment. Globalization had a statistically significant negative effect on the impact of unions on employment rate. In the TUC documents, manufacturing stated that lack of international competitiveness leads to job loss. Within Unite, manufacturing was far more likely to mention layoffs than construction, and the leader of manufacturing stated that sometimes firms close due to lack of international competitiveness. However, while there is some evidence that globalization is decreasing the ability of trade unions to demand increased employment protection (specifically the results of analyses on severance pay and advance notice at 9 months), there is also evidence that unions are continuing to work diligently to protect their members from unemployment through statutory regulation. This was shown in the ambiguous results of advance notice at 4 and 20 years, as well as statements made in the TUC documents.

Consequently, facing unemployment and stagnant wages, it appears that a principal response of unions is to focus on training to increase productivity. Cross-nationally, globalization increased investment in training/retraining programs. Within the UK, manufacturing unions were far more likely to discuss the need for skills both at the Congress and within Unite. Furthermore, they linked this need directly to globalization. When asked how unions are responding to globalization, the leader of Unite's manufacturing sector stated almost unequivocally training and retraining.

The evidence for infrastructure is less substantial, but still sufficient to make an argument for the effect of globalization on union strategy. The Unite leader stated that infrastructure was important and that Unite was working to push the government towards increasing it, but did not elaborate. In the TUC documents, manufacturing unions were far more likely to discuss infrastructure than UCATT was, and there is some statements indicative of a connection between a need for infrastructure and rising globalization. Finally, for all three measures of infrastructure, despite their conceptual limitations, globalization was found to increase the effect of unionization on these outcomes. However, for the standard model these results were only significant at the 0.05 level for two of the three measures, and for one of the measures, the effect of globalization flipped with a robustness check.

Finally, the cross-national analysis clearly indicates that globalization causes union strength to increase in its positive effect on unemployment benefits expenditure. Furthermore, the comparison of manufacturing and construction's support for social services maintains this general argument. However, the microfoundations of this effect could not be satisfactorily established. During the interview with the manufacturing leader, it was indicated that Unite is pushing for unemployment benefits, but this did not seem to be a "new" policy. In the TUC

documents, it was an attack on benefits that led manufacturing unions to become particularly adamant about supporting these policies, which is indicative of a standing preference. It may simply be that unions always fight for unemployment benefits, and globalization increases the number of unemployed people who require the benefits – thus the effect that union strength has on expenditure on benefits. However, if all that can be said is that unions *protect* benefits in the face of globalization, this is still noteworthy.

What theory did not address was the menu of other strategies that unions are adopting in the face of globalization. A fourth of the interview with the leader of the manufacturing sector of Unite was spent discussing the creation of a global labor movement. It is prominent in the TUC and Unite documents. Similarly, the strategy of government investment directly in manufacturing was ignored by theory, though it is perhaps the simplest solution. Negotiations over macro-economic issues also played a key role in discussions in the TUC documents. The importance that unions place on expanding their brand to new audiences, combating precariousness, and defending union rights generally is also ignored in this work. To properly bring these factors into the discussion would require countless tomes and must be addressed by future scholarship.

Given the actual and temporal interconnection between globalization and technological change, it is difficult to rule out the possibility that the observed effects are simply the result of innovation. While efforts were made to control for this possibility – the inclusion of the ICT variable in the large-n analysis and the selection of sectors which have experienced similar declines in labor input – this work cannot rule out its confounding effects given the difficulty of operationalizing technological change.

Similarly, manufacturing may simply be an odd sector – behaving differently for some other unknown reason. Changes in overall union behavior may be changes in what sectors of the economy are unionized. While less of a concern in the cross-national analysis in which the percent of the economy in manufacturing was controlled for, it was not properly controlled for in the case study. This is especially significant as, due to the limited availability of TUC documents for this study, a change in the position of manufacturing unions was not observed. One might be able to discern this transition in the century of TUC records which exist but were unavailable to me for this research due to practical constraints.

There is also the ongoing threat that these results are being confounded by encompassingness. The measure of union strength used in the large-n analysis is also an indicator of the concept of encompassingness. Unite is a more encompassing union than UCATT, and manufacturing is a more encompassing (500,000 members) sector of Unite. While controls such as wage coordination and within case comparison were used to compensate for this possibility, it can only be said that the threat has been minimized. This is, however, a concern that can be addressed, although was not in this current research. I look forward to reading or doing the research to repair this design flaw.

Even without these shortcomings, the case study, while providing evidence for theory in the United Kingdom, cannot be extrapolated to the rest of the industrialized world. While external validity is supported by the cross-national analysis, those results are limited by a number of assumptions, theoretical as well as in regards to the model and the interpretation of the model. At best, there is substantiation of theory, but further research is imperative.

Conclusion: There is [Still] Power in a Union

An acquaintance of mine works for the AFL-CIO. A young man in his 20s, he received advice from a more experienced unionist: “Have a fall back career, because the labor movement in America is dying.”⁵¹ While certainly more prevalent in the United States, there is a growing sentiment worldwide that unions are obsolete. The assistant general secretary of TUC was quoted as saying that while the public of Britain is well-disposed towards unions, many “just don't think we're relevant (Nowak, *The Economist* 2012).” However, trade unions are relevant. For generations the trade union has ensured the welfare of the working class, and built the middle class. It is one of the rare organizations that does not represent the rich and the powerful, and its decline is part of why America is so unequal today (Hacker and Pierson 2011, Noah 2012). For the third time, I quote the results of Rueda and Pontusson's study which found union density to be the single greatest predictor of equality (2000). Those concerned with an egalitarian society must therefore be concerned with unions.

Globalization has changed the relationship between the factors of production. Globalization has caused a decline in labor's bargaining power. Globalization has weakened the union. The findings of a number of studies quoted above, the results observed in the cross-national analysis, and the statements made by British unionists are all indicative of this reality. However, the union has not surrendered. It is fighting for the welfare of its membership in the face of global competition. It is doing so by ramping up its lobbying for investment in training, infrastructure, and insurance. The cross-national analysis established that globalization has resulted in an increased effect of unions on these outcomes. Further, it has been shown that, at least in the United Kingdom, unionists facing globalization (much more than those who are not) are declaring year after year the need for increased productivity, for a skilled workforce, for

⁵¹ Paraphrased from hearsay.

retraining, for security, and for infrastructure. Additionally, contrary to the expectations of theory, they are unwilling to forsake their members' employment protection to the vicissitudes of the market, in a race to the bottom. By defending their members in these ways, the unions continue to represent the interests of the working class. A common chant of the left, from Joe Hill to Billy Bragg, is that there is power in a union. Even facing globalization this has not changed. There is still power in a union.

Tables & Figures

Table 1: Fixed Effects Model Predicting Labor Share

Labor Share (7.79)				
	Excluding Interactive Effects	Including Interactive Effects	Including Interactive Effects, Excluding Controls	Including Interactive Effects, Excluding Outlier
N	520	520	795	481
Union Strength (13.3)	0.385* (0.295, 0.476)	1.06* (0.885, 1.24)	0.365* (0.245, 0.486)	1.13* (0.94, 1.31)
Globalization (15.5)	-0.0689 (-0.143, 0.00566)	0.172* (0.0833, 0.262)	-0.0573 (-0.124, 0.00963)	0.204* (0.109, 0.299)
Union Strength * Globalization		-0.0116* (-0.0143, -0.00892)	-0.00369* (-0.00534, -0.00203)	-0.0124* (-0.0152, -0.00959)
Wage Coordination (1.36)	-0.992* (-1.37, -0.618)	-0.787 (-1.14, -0.436)		-0.835* (-1.21, -0.466)
Executive is Centrist (Dummy)	0.497 (-0.558, 1.55)	0.841 (-0.143, 1.82)		0.802 (-0.201, 1.8)
Executive is Left of Center (Dummy)	0.12 (-0.444, 0.683)	0.128 (-0.396, 0.651)		0.128 (-0.411, 0.668)
ICT (0.921)	1.00* (0.469, 1.54)	0.682* (0.18, 1.18)		0.686* (0.161, 1.21)
Manufacturing (4.90)	10.8 (-2.37, 24)	6.2 (-6.12, 18.5)		5.8 (-6.76, 18.4)
Mining (0.46)	9.5 (-4.06, 23.1)	6.5 (-6.12, 19.1)		6.21 (-6.66, 19.1)
Agriculture (4.87)	12.4 (-0.884, 25.6)	7.99 (-4.36, 20.3)		7.54 (-5.05, 20.1)
Utilities (0.366)	12.6 (-0.379, 25.6)	8.74 (-3.38, 20.9)		8.45 (-3.87, 20.8)
Construction (1.53)	11.8 (-1.47, 25)	6.96 (-5.38, 19.3)		6.5 (-6.08, 19.1)
Hospitality (3.17)	11.6 (-1.63, 24.9)	7.28 (-5.09, 19.7)		6.79 (-5.82, 19.4)
Distribution (1.06)	9.55 (-3.64, 22.7)	5.48 (-6.81, 17.8)		5.11 (-7.41, 17.6)
Finance (4.14)	10.5 (-2.74, 23.7)	5.83 (-6.52, 18.2)		5.47 (-7.12, 18.1)
Service (5.46)	11.1 (-2.12, 24.3)	6.68 (-5.66, 19)		6.28 (-6.29, 18.9)
Mean Years of Schooling (1.54)	-0.313 (-0.801, 0.175)	-0.782* (-1.25, -0.315)		-0.85* (-1.33, -0.372)
Energy Consumption (4990)	0.0000867 (-0.000282, 0.000455)	0.00053* (0.000172, 0.000887)		0.00047* (0.000102, 0.000838)
Telephone Subscribers (465)	0.00392* (0.00135, 0.00649)	0.00474* (0.00234, 0.00714)		0.00398* (0.00139, 0.00657)
Roads Paved (20.9)	-0.0386 (-0.0775, 0.00022)	-0.124* (-0.165, -0.0824)		-0.12* (-0.162, -0.0777)
Country	Varies	Varies	Varies	Varies
Year	Varies	Varies	Varies	Varies
Constant	-1050 (-2370, 272)	-615 (-1850, 617)	63.5* (58.8, 68.1)	-574 (-1830, 682)
Adjusted R²	0.904	0.917	0.837	0.918

*All estimates are rounded to three significant digits. Below each variable name is its standard deviation. Below each coefficient estimate is its 95% confidence interval. All estimates significant at the 0.05 level are followed by a *.*

Table 2: Fixed Effects Model Predicting Severance Pay at 4 Years

Severance Pay at 4 Years (0.888)				
	Excluding Interactive Effects	Including Interactive Effects	Including Interactive Effects, Excluding Controls	Including Interactive Effects, Excluding Outlier
N	451	451	525	412
Union Strength (13.3)	0.00497 (-0.00258, 0.0125)	0.0291* (0.0131, 0.0451)	0.0284* (0.0151, 0.0417)	0.0298* (0.0127, 0.0469)
Globalization (15.5)	-0.00352 (-0.0104, 0.0034)	0.00589 (-0.00289, 0.0147)	0.0211* (0.0145, 0.0277)	0.00668 (-0.00312, 0.0165)
Union Strength * Globalization		-0.000394* (-0.000625, -0.000163)	-0.00066* (-0.000844, -0.000477)	-0.000407* (-0.000654, -0.000161)
Wage Coordination (1.36)	-0.027 (-0.0574, 0.0033)	-0.0201 (-0.0503, 0.0101)		-0.0187 (-0.051, 0.0136)
Executive is Centrist (Dummy)	0.0725 (-0.0157, 0.161)	0.0828 (-0.00448, 0.17)		0.0843 (-0.00624, 0.175)
Executive is Left of Center (Dummy)	0.0673* (0.0175, 0.117)	0.0641* (0.015, 0.113)		0.0678 (0.016, 0.12)
ICT (0.921)	0.0445 (-0.00632, 0.0952)	0.0262 (-0.025, 0.0774)		0.0184 (-0.0381, 0.075)
Manufacturing (4.90)	0.835 (-0.216, 1.89)	0.698 (-0.342, 1.74)		0.745 (-0.339, 1.83)
Mining (0.46)	0.996 (-0.0865, 2.08)	0.923 (-0.146, 1.99)		0.974 (-0.14, 2.09)
Agriculture (4.87)	0.841 (-0.214, 1.9)	0.719 (-0.325, 1.76)		0.764 (-0.323, 1.85)
Utilities (0.366)	0.44 (-0.594, 1.47)	0.347 (-0.674, 1.37)		0.375 (-0.684, 1.43)
Construction (1.53)	0.895 (-0.159, 1.95)	0.754 (-0.289, 1.8)		0.803 (-0.284, 1.89)
Hospitality (3.17)	0.804 (-0.254, 1.86)	0.683 (-0.363, 1.73)		0.725 (-0.365, 1.82)
Distribution (1.06)	0.784 (-0.262, 1.83)	0.659 (-0.376, 1.69)		0.704 (-0.373, 1.78)
Finance (4.14)	0.798 (-0.255, 1.85)	0.657 (-0.386, 1.7)		0.701 (-0.385, 1.79)
Service (5.46)	0.855 (-0.198, 1.91)	0.723 (-0.318, 1.76)		0.765 (-0.319, 1.85)
Mean Years of Schooling (1.54)	0.00256 (-0.0416, 0.0467)	-0.0172 (-0.0623, 0.0279)		-0.0126 (-0.0599, 0.0346)
Energy Consumption (4990)	-0.0000354* (-0.0000688, -0.00000207)	-0.00002 (-0.0000542, 0.0000141)		-0.0000208 (-0.0000567, 0.0000152)
Telephone Subscribers (465)	-0.0000785 (-0.000326, 0.000169)	-0.000014 (-0.000261, 0.000233)		0.0000246 (-0.000245, 0.000294)
Roads Paved (20.9)	-0.00236 (-0.00582, 0.00109)	-0.00522* (-0.00903, -0.00142)		-0.00538** (-0.00936, -0.0014)
Country	Varies	Varies	Varies	Varies
Year	Varies	Varies	Varies	Varies
Constant	-81.2 (-186, 24)	-68.7 (-173, 35.3)	-0.00563 (-0.473, 0.462)	-73.2 (-182, 35.1)
Adjusted R²	0.954	0.955	0.943	0.951

*All estimates are rounded to three significant digits. Below each variable name is its standard deviation. Below each coefficient estimate is its 95% confidence interval. All estimates significant at the 0.05 level are followed by a *.*

Table 3: Fixed Effects Model Predicting Severance Pay at 20 Years

Severance Pay at 20 Years (3.74)				
	Excluding Interactive Effects	Including Interactive Effects	Including Interactive Effects, Excluding Controls	Including Interactive Effects, Excluding Outlier
N	451	451	525	412
Union Strength (13.3)	0.0378* (0.00644, 0.0691)	0.125* (0.0581, 0.191)	0.13* (0.0775, 0.183)	0.126* (0.055, 0.198)
Globalization (15.5)	-0.0169 (-0.0457, 0.0118)	0.0169 (-0.0196, 0.0535)	0.0777* (0.0516, 0.104)	0.0188 (-0.0221, 0.0597)
Union Strength * Globalization		-0.00142* (-0.00238, -0.000456)	-0.00248* (-0.00321, -0.00175)	-0.00144* (-0.00247, -0.000415)
Wage Coordination (1.36)	-0.126* (-0.252, -0.000265)	-0.101 (-0.227, 0.0248)		-0.0973 (-0.232, 0.0374)
Executive is Centrist (Dummy)	0.257 (-0.109, 0.623)	0.294 (-0.0696, 0.658)		0.298 (-0.0792, 0.676)
Executive is Left of Center (Dummy)	0.261* (0.0538, 0.467)	0.249 (0.0443, 0.454)		0.258* (0.0416, 0.474)
ICT (0.921)	0.265 (0.0544, 0.476)	0.2 (-0.0141, 0.413)		0.178 (-0.0575, 0.414)
Manufacturing (4.90)	3.72 (-0.642, 8.08)	3.23 (-1.11, 7.56)		3.41 (-1.11, 7.93)
Mining (0.46)	4.37 (-0.125, 8.86)	4.11 (-0.348, 8.56)		4.3 (-0.349, 8.94)
Agriculture (4.87)	3.74 (-0.634, 8.12)	3.3 (-1.04, 7.65)		3.48 (-1.06, 8.01)
Utilities (0.366)	2.15 (-2.15, 6.44)	1.81 (-2.45, 6.07)		1.92 (-2.5, 6.34)
Construction (1.53)	3.9 (-0.47, 8.28)	3.4 (-0.948, 7.74)		3.58 (-0.953, 8.11)
Hospitality (3.17)	3.59 (-0.801, 7.99)	3.16 (-1.2, 7.52)		3.32 (-1.22, 7.87)
Distribution (1.06)	3.41 (-0.932, 7.75)	2.96 (-1.35, 7.28)		3.13 (-1.36, 7.62)
Finance (4.14)	3.55 (-0.819, 7.93)	3.05 (-1.3, 7.39)		3.21 (-1.31, 7.74)
Service (5.46)	3.79 (-0.578, 8.16)	3.32 (-1.02, 7.66)		3.48 (-1.04, 8)
Mean Years of Schooling (1.54)	0.027 (-0.156, 0.21)	-0.044 (-0.232, 0.144)		-0.0297 (-0.227, 0.167)
Energy Consumption (4990)	-0.000145* (-0.000284, - 0.00000656)	-0.0000897 (-0.000232, 0.0000526)		-0.0000928 (-0.000243, 0.0000571)
Telephone Subscribers (465)	-0.000378 (-0.00141, 0.000651)	-0.000146 (-0.00118, 0.000885)		-0.0000229 (-0.00115, 0.0011)
Roads Paved (20.9)	-0.0103 (-0.0247, 0.00406)	-0.0206* (-0.0364, -0.00474)		-0.0212* (-0.0378, -0.00456)
Country	Varies	Varies	Varies	Varies
Year	Varies	Varies	Varies	Varies
Constant	-365 (-802, 71.9)	-320 (-754, 114)	-3.23* (-5.09, -1.38)	-337 (-789, 115)
Adjusted R²	0.949	0.950	0.949	0.949

*All estimates are rounded to three significant digits. Below each variable name is its standard deviation. Below each coefficient estimate is its 95% confidence interval. All estimates significant at the 0.05 level are followed by a *.*

Table 4: Fixed Effects Model Predicting Advance notice at 9 Months

Advance notice at 9 Months (0.606)				
	Excluding Interactive Effects	Including Interactive Effects	Including Interactive Effects, Excluding Controls	Including Interactive Effects, Excluding Outlier
N	451	451	525	412
Union Strength (13.3)	-0.0106* (-0.0163, -0.00492)	0.018* (0.00622, 0.0298)	0.00761 (-0.0016, 0.0168)	0.0187* (0.00612, 0.0313)
Globalization (15.5)	-0.00848* (-0.0137, -0.00326)	0.00267 (-0.00381, 0.00914)	-0.00228 (-0.00683, 0.00227)	0.00369 (-0.00352, 0.0109)
Union Strength * Globalization		-0.000467* (-0.000638, -0.000297)	-0.000452* (-0.000579, -0.000325)	-0.00048* (-0.000661, -0.000299)
Wage Coordination (1.36)	-0.0163 (-0.0392, 0.00659)	-0.00804 (-0.0303, 0.0143)		-0.00499 (-0.0288, 0.0188)
Executive is Centrist (Dummy)	-0.0000493 (-0.0666, 0.0665)	0.0122 (-0.0522, 0.0765)		0.0124 (-0.0541, 0.079)
Executive is Left of Center (Dummy)	-0.00657 (-0.0441, 0.031)	-0.0103 (-0.0466, 0.026)		-0.00802 (-0.0461, 0.0301)
ICT (0.921)	0.0309 (-0.00743, 0.0692)	0.00924 (-0.0286, 0.0471)		-0.00105 (-0.0426, 0.0405)
Manufacturing (4.90)	-0.154 (-0.946, 0.639)	-0.316 (-1.08, 0.451)		-0.251 (-1.05, 0.546)
Mining (0.46)	-0.0542 (-0.871, 0.762)	-0.141 (-0.93, 0.648)		-0.072 (-0.891, 0.747)
Agriculture (4.87)	-0.141 (-0.937, 0.654)	-0.286 (-1.06, 0.484)		-0.221 (-1.02, 0.578)
Utilities (0.366)	-0.0206 (-0.8, 0.759)	-0.13 (-0.884, 0.624)		-0.0942 (-0.873, 0.685)
Construction (1.53)	-0.112 (-0.906, 0.683)	-0.278 (-1.05, 0.491)		-0.212 (-1.01, 0.587)
Hospitality (3.17)	-0.159 (-0.957, 0.639)	-0.301 (-1.07, 0.471)		-0.241 (-1.04, 0.56)
Distribution (1.06)	-0.19 (-0.979, 0.599)	-0.338 (-1.1, 0.426)		-0.275 (-1.07, 0.517)
Finance (4.14)	-0.157 (-0.951, 0.637)	-0.324 (-1.09, 0.445)		-0.263 (-1.06, 0.536)
Service (5.46)	-0.173 (-0.967, 0.621)	-0.329 (-1.1, 0.44)		-0.27 (-1.07, 0.528)
Mean Years of Schooling (1.54)	-0.00576 (-0.0391, 0.0276)	-0.0291 (-0.0624, 0.00415)		-0.0242 (-0.0589, 0.0105)
Energy Consumption (4990)	-0.000121* (-0.000146, -0.0000961)	-0.000103* (-0.000128, -0.0000778)		-0.000104* (-0.00013, -0.0000774)
Telephone Subscribers (465)	0.000262* (0.0000755, 0.000449)	0.000339* (0.000156, 0.000521)		0.000395* (0.000197, 0.000593)
Roads Paved (20.9)	0.000676 (-0.00193, 0.00329)	-0.00271 (-0.00552, 0.0000964)		-0.00299* (-0.00591, -0.0000589)
Country	Varies	Varies	Varies	Varies
Year	Varies	Varies	Varies	Varies
Constant	17.1 (-62.3, 96.5)	31.9 (-44.9, 109)	0.757* (0.433, 1.08)	25.6 (-54.1, 105)
Adjusted R²	0.954	0.957	0.941	0.957

*All estimates are rounded to three significant digits. Below each variable name is its standard deviation. Below each coefficient estimate is its 95% confidence interval. All estimates significant at the 0.05 level are followed by a *.*

Table 5: Fixed Effects Model Predicting Advance notice at 4 Years

Advance notice at 4 Years (0.917)				
	Excluding Interactive Effects	Including Interactive Effects	Including Interactive Effects, Excluding Controls	Including Interactive Effects, Excluding Outlier
N	451	451	525	412
Union Strength (13.3)	-0.0349* (-0.0438, -0.026)	-0.0355* (-0.0547, -0.0164)	-0.0303* (-0.0459, -0.0147)	-0.0415* (-0.0615, -0.0215)
Globalization (15.5)	-0.0205* (-0.0286, -0.0123)	-0.0207* (-0.0312, -0.0102)	-0.0269* (-0.0346, -0.0192)	-0.0214* (-0.0329, -0.00997)
Union Strength * Globalization		0.0000962 (-0.000266, 0.000286)	-0.000124 (-0.000338, 0.0000907)	0.0000948 (-0.000194, 0.000383)
Wage Coordination (1.36)	0.0405* (0.0048, 0.0763)	0.0404* (0.00425, 0.0765)		0.0558* (0.018, 0.0936)
Executive is Centrist (Dummy)	0.0533 (-0.0506, 0.157)	0.053 (-0.0513, 0.157)		0.0475 (-0.0583, 0.153)
Executive is Left of Center (Dummy)	0.139* (0.0806, 0.198)	0.139* (0.0805, 0.198)		0.135* (0.0748, 0.196)
ICT (0.921)	-0.0509 (-0.111, 0.00895)	-0.0504 (-0.112, 0.0108)		-0.0617 (-0.128, 0.00445)
Manufacturing (4.90)	0.181 (-1.06, 1.42)	0.184 (-1.06, 1.43)		0.469 (-0.799, 1.74)
Mining (0.46)	0.239 (-1.04, 1.51)	0.241 (-1.04, 1.52)		0.521 (-0.782, 1.82)
Agriculture (4.87)	0.214 (-1.03, 1.46)	0.217 (-1.03, 1.46)		0.514 (-0.758, 1.79)
Utilities (0.366)	0.149 (-1.07, 1.37)	0.151 (-1.07, 1.37)		0.335 (-0.904, 1.57)
Construction (1.53)	0.154 (-1.09, 1.4)	0.158 (-1.09, 1.4)		0.445 (-0.826, 1.72)
Hospitality (3.17)	0.15 (-1.1, 1.4)	0.153 (-1.1, 1.4)		0.445 (-0.83, 1.72)
Distribution (1.06)	0.201 (-1.03, 1.43)	0.204 (-1.03, 1.44)		0.474 (-0.786, 1.73)
Finance (4.14)	0.283 (-0.958, 1.52)	0.286 (-0.96, 1.53)		0.565 (-0.705, 1.84)
Service (5.46)	0.234 (-1.01, 1.47)	0.237 (-1.01, 1.48)		0.52 (-0.749, 1.79)
Mean Years of Schooling (1.54)	-0.182* (-0.234, -0.13)	-0.181* (-0.235, -0.127)		-0.174* (-0.229, -0.118)
Energy Consumption (4990)	-0.0000337 (-0.000073, 0.0000556)	-0.0000341 (-0.0000749, 0.0000669)		-0.0000331 (-0.0000752, 0.0000893)
Telephone Subscribers (465)	0.000374* (0.0000823, 0.000666)	0.000373* (0.0000769, 0.000668)		0.000517* (0.000202, 0.000832)
Roads Paved (20.9)	0.00985* (0.00577, 0.0139)	0.00992* (0.00537, 0.0145)		0.00872* (0.00407, 0.0134)
Country	Varies	Varies	Varies	Varies
Year	Varies	Varies	Varies	Varies
Constant	-15.4 (-139, 109)	-15.7 (-140, 109)	3.1* (2.56, 3.65)	-44.1 (-171, 82.7)
Adjusted R²	0.949	0.949	0.927	0.950

*All estimates are rounded to three significant digits. Below each variable name is its standard deviation. Below each coefficient estimate is its 95% confidence interval. All estimates significant at the 0.05 level are followed by a *.*

Table 6: Fixed Effects Model Predicting Advance notice at 20 Years

Advance notice at 20 Years (2.48)				
	Excluding Interactive Effects	Including Interactive Effects	Including Interactive Effects, Excluding Controls	Including Interactive Effects, Excluding Outlier
N	451	451	525	412
Union Strength (13.3)	-0.0276* (-0.0428, -0.0123)	-0.0755* (-0.108, -0.0431)	-0.0381* (-0.0643, -0.012)	-0.0898* (-0.124, -0.056)
Globalization (15.5)	-0.0137 (-0.0277, 0.000248)	-0.0324* (-0.0501, -0.0146)	-0.0234* (-0.0363, -0.0105)	-0.0391* (-0.0585, -0.0197)
Union Strength * Globalization		0.000781* (0.000315, 0.00125)	0.000147* (-0.000213, 0.000506)	0.000989* (0.0005, 0.00148)
Wage Coordination (1.36)	0.0506 (-0.0107, 0.112)	0.0368 (-0.0243, 0.0978)		0.0545 (-0.00948, 0.119)
Executive is Centrist (Dummy)	0.191* (0.0129, 0.369)	0.171 (-0.00565, 0.347)		0.16 (-0.019, 0.339)
Executive is Left of Center (Dummy)	0.175* (0.0741, 0.275)	0.181* (0.0815, 0.28)		0.17* (0.067, 0.272)
ICT (0.921)	-0.165 (-0.267, -0.0622)	-0.129* (-0.232, -0.025)		-0.123* (-0.235, -0.0107)
Manufacturing (4.90)	0.938 (-1.18, 3.06)	1.21 (-0.892, 3.31)		1.56 (-0.59, 3.7)
Mining (0.46)	0.726 (-1.46, 2.91)	0.871 (-1.29, 3.03)		1.2 (-1.01, 3.41)
Agriculture (4.87)	1.07 (-1.06, 3.2)	1.31 (-0.799, 3.42)		1.68 (-0.475, 3.83)
Utilities (0.366)	0.705 (-1.38, 2.79)	0.889 (-1.18, 2.95)		1.13 (-0.968, 3.23)
Construction (1.53)	1.01 (-1.12, 3.14)	1.29 (-0.822, 3.39)		1.64 (-0.512, 3.79)
Hospitality (3.17)	0.978 (-1.16, 3.12)	1.22 (-0.9, 3.33)		1.6 (-0.563, 3.75)
Distribution (1.06)	1 (-1.11, 3.12)	1.25 (-0.843, 3.34)		1.58 (-0.552, 3.72)
Finance (4.14)	1.14 (-0.992, 3.26)	1.41 (-0.693, 3.52)		1.76 (-0.395, 3.91)
Service (5.46)	1.11 (-1.01, 3.24)	1.37 (-0.733, 3.48)		1.73 (-0.416, 3.88)
Mean Years of Schooling (1.54)	0.209* (0.12, 0.299)	0.249* (0.157, 0.34)		0.256* (0.163, 0.35)
Energy Consumption (4990)	-0.00000737 (-0.0000748, 0.00006)	-0.0000379 (-0.000107, 0.0000311)		-0.000028 (-0.0000992, 0.0000432)
Telephone Subscribers (465)	-0.0000931 (-0.000594, 0.000407)	-0.000221 (-0.000721, 0.000279)		-0.000052 (-0.000585, 0.000481)
Roads Paved (20.9)	-0.00415 (-0.0111, 0.00283)	0.00151 (-0.00618, 0.0092)		-0.000456 (-0.00834, 0.00743)
Country	Varies	Varies	Varies	Varies
Year	Varies	Varies	Varies	Varies
Constant	-101 (-314, 111)	-126 (-337, 84.2)	2.98* (2.06, 3.9)	-161 (-376, 53.2)
Adjusted R²	0.978	0.978	0.972	0.978

*All estimates are rounded to three significant digits. Below each variable name is its standard deviation. Below each coefficient estimate is its 95% confidence interval. All estimates significant at the 0.05 level are followed by a *.*

Table 7: Fixed Effects Model Predicting Unemployment Rate

Unemployment Rate (4.22)				
	Excluding Interactive Effects	Including Interactive Effects	Including Interactive Effects, Excluding Controls	Including Interactive Effects, Excluding Outlier
N	475	475	721	436
Union Strength (13.3)	-0.169* (-0.234, -0.103)	-0.342* (-0.481, -0.204)	-0.116* (-0.204, -0.0278)	-0.389* (-0.53, -0.248)
Globalization (15.5)	0.084* (0.0296, 0.138)	0.0121 (-0.062, 0.0861)	0.0547* (0.000442, 0.109)	0.0083 (-0.0688, 0.0854)
Union Strength * Globalization		0.00297* (0.000877, 0.00507)	0.00185* (0.000581, 0.00311)	0.00377* (0.00164, 0.00589)
Wage Coordination (1.36)	-0.0722 (-0.332, 0.188)	-0.123 (-0.383, 0.137)		-0.0398 (-0.308, 0.229)
Executive is Centrist (Dummy)	0.913* (0.178, 1.65)	0.829* (0.0976, 1.56)		0.772* (0.0475, 1.5)
Executive is Left of Center (Dummy)	0.103 (-0.291, 0.497)	0.124 (-0.267, 0.515)		0.11 (-0.281, 0.502)
ICT (0.921)	0.148 (-0.261, 0.556)	0.273 (-0.142, 0.687)		0.367 (-0.0617, 0.795)
Manufacturing (4.90)	-9.00 (-18, 0.00984)	-8.08 (-17, 0.878)		-7.03 (-15.9, 1.86)
Mining (0.46)	-9.86* (-19.2, -0.576)	-9.55* (-18.8, -0.334)		-8.69 (-17.9, 0.466)
Agriculture (4.87)	-8.98 (-18, 0.0677)	-8.17 (-17.2, 0.817)		-7.14 (-16.1, 1.79)
Utilities (0.366)	-6.53 (-15.4, 2.3)	-5.71 (-14.5, 3.06)		-5.32 (-14, 3.36)
Construction (1.53)	-10.3* (-19.3, -1.25)	-9.34* (-18.3, -0.367)		-8.38 (-17.3, 0.536)
Hospitality (3.17)	-9.48* (-18.5, -0.415)	-8.65 (-17.7, 0.354)		-7.69 (-16.6, 1.25)
Distribution (1.06)	-8.83 (-17.8, 0.176)	-8 (-16.9, 0.949)		-6.99 (-15.9, 1.89)
Finance (4.14)	-9.34* (-18.4, -0.314)	-8.39 (-17.4, 0.589)		-7.28 (-16.2, 1.63)
Service (5.46)	-8.24 (-17.3, 0.788)	-7.38 (-16.4, 1.59)		-6.31 (-15.2, 2.59)
Mean Years of Schooling (1.54)	0.515* (0.0861, 0.944)	0.668* (0.229, 1.11)		0.653* (0.218, 1.09)
Energy Consumption (4990)	0.000146 (-0.000115, 0.000408)	0.0000408 (-0.000229, 0.000311)		-0.0000421 (-0.000313, 0.000229)
Telephone Subscribers (465)	-0.00515* (-0.00694, -0.00337)	-0.00541* (-0.00718, -0.00363)		-0.00653* (-0.00841, -0.00466)
Roads Paved (20.9)	-0.08* (-0.106, -0.0538)	-0.0599* (-0.0895, -0.0304)		-0.0566* (-0.0863, -0.0269)
Country	Varies	Varies	Varies	Varies
Year	Varies	Varies	Varies	Varies
Constant	906* (3.86, 1810)	822 (-74.2, 1720)	1.72 (-1.85, 5.3)	722 (-168, 1610)
Adjusted R²	0.861	0.863	0.715	0.863

*All estimates are rounded to three significant digits. Below each variable name is its standard deviation. Below each coefficient estimate is its 95% confidence interval. All estimates significant at the 0.05 level are followed by a *.*

Table 8: Fixed Effects Model Predicting on Investment in Training

Training (0.190)				
	Excluding Interactive Effects	Including Interactive Effects	Including Interactive Effects, Excluding Controls	Including Interactive Effects, Excluding Outlier
N	426	426	511	387
Union Strength (13.3)	0.000925 (-0.00345, 0.0053)	-0.0213* (-0.0325, -0.0101)	-0.0109* (-0.02, -0.00185)	-0.0217* (-0.0333, -0.0101)
Globalization (15.5)	0.00845* (0.00472, 0.0122)	0.000931 (-0.00412, 0.00598)	0.000269 (-0.00324, 0.00378)	0.0000758 (-0.00528, 0.00543)
Union Strength * Globalization		0.000348* (0.000186, 0.00051)	0.000201* (0.0000702, 0.000331)	0.000356* (0.000189, 0.000522)
Wage Coordination (1.36)	-0.00563 (-0.0264, 0.0152)	-0.0114 (-0.0319, 0.00916)		-0.0139 (-0.0359, 0.0081)
Executive is Centrist (Dummy)	-0.0315 (-0.0847, 0.0217)	-0.0392 (-0.0913, 0.0129)		-0.0377 (-0.0912, 0.0158)
Executive is Left of Center (Dummy)	-0.0122 (-0.0373, 0.0129)	-0.0124 (-0.037, 0.0121)		-0.0132 (-0.0387, 0.0122)
ICT (0.921)	-0.00234 (-0.0258, 0.0211)	0.00273 (-0.0203, 0.0258)		0.00272 (-0.0215, 0.027)
Manufacturing (4.90)	-0.202 (-0.816, 0.413)	-0.106 (-0.709, 0.496)		-0.114 (-0.731, 0.504)
Mining (0.46)	-0.0025 (-0.633, 0.628)	0.0112 (-0.605, 0.627)		0.000941 (-0.631, 0.633)
Agriculture (4.87)	-0.171 (-0.786, 0.444)	-0.0794 (-0.682, 0.523)		-0.0856 (-0.703, 0.532)
Utilities (0.366)	0.00742 (-0.605, 0.62)	0.0728 (-0.527, 0.672)		0.0771 (-0.536, 0.691)
Construction (1.53)	-0.196 (-0.809, 0.418)	-0.0954 (-0.697, 0.506)		-0.102 (-0.719, 0.515)
Hospitality (3.17)	-0.183 (-0.801, 0.435)	-0.0934 (-0.699, 0.512)		-0.0964 (-0.717, 0.524)
Distribution (1.06)	-0.158 (-0.774, 0.458)	-0.0703 (-0.674, 0.533)		-0.0772 (-0.695, 0.541)
Finance (4.14)	-0.194 (-0.81, 0.421)	-0.103 (-0.706, 0.5)		-0.113 (-0.731, 0.505)
Service (5.46)	-0.171 (-0.786, 0.444)	-0.0818 (-0.685, 0.521)		-0.088 (-0.705, 0.529)
Mean Years of Schooling (1.54)	0.0135 (-0.0109, 0.0378)	0.029* (0.00409, 0.0538)		0.0286* (0.00282, 0.0544)
Energy Consumption (4990)	0.0000104 (-0.00000962, 0.0000303)	0.00000441 (-0.0000153, 0.0000241)		0.00000616 (-0.0000143, 0.0000266)
Telephone Subscribers (465)	0.000308* (0.000192, 0.000424)	0.000286* (0.000172, 0.0004)		0.000305* (0.000179, 0.000431)
Roads Paved (20.9)	0.00676* (0.00477, 0.00875)	0.00831* (0.00624, 0.0104)		0.00827* (0.00613, 0.0104)
Country	Varies	Varies	Varies	Varies
Year	Varies	Varies	Varies	Varies
Constant	16.7 (-44.8, 78.2)	8.03 (-52.2, 68.2)	-0.000648 (-0.264, 0.263)	8.68 (-53, 70.4)
Adjusted R²	0.777	0.787	0.674	0.777

*All estimates are rounded to three significant digits. Below each variable name is its standard deviation. Below each coefficient estimate is its 95% confidence interval. All estimates significant at the 0.05 level are followed by a *.*

Table 9: Fixed Effects Model Predicting Energy Consumption

Energy Consumption (4990)				
	Excluding Interactive Effects	Including Interactive Effects	Including Interactive Effects, Excluding Controls	Including Interactive Effects, Excluding Outlier
N	524	524	608	485
Union Strength (13.3)	24.8* (2.97, 46.6)	-101* (-146, -55.2)	-57.5* (-94.1, -21)	-91.7* (-140, -43.6)
Globalization (15.5)	42.4* (24.8, 60)	-6.27 (-29.4, 16.8)	3.08 (-13.3, 19.5)	1.04 (-23.7, 25.8)
Union Strength * Globalization		2.05* (1.39, 2.71)	1.62* (1.1, 2.14)	1.92* (1.22, 2.61)
Wage Coordination (1.36)	-18.8 (-112, 74.8)	-52.7 (-143, 38)		-45.9 (-142, 50.2)
Executive is Centrist (Dummy)	328* (64, 591)	237 (-18.3, 492)		241 (-19.8, 502)
Executive is Left of Center (Dummy)	-7.71 (-149, 134)	-4.11 (-140, 132)		3.91 (-137, 145)
ICT (0.921)	105 (-28.2, 237)	161* (32.1, 290)		152* (16.5, 287)
Manufacturing (4.90)	872 (-2440, 4190)	1650 (-1550, 4850)		1710 (-1570, 4980)
Mining (0.46)	1740 (-1670, 5140)	2100 (-1180, 5380)		2150 (-1200, 5500)
Agriculture (4.87)	748 (-2580, 4070)	1460 (-1740, 4670)		1510 (-1770, 4790)
Utilities (0.366)	-105 (-3370, 3160)	538 (-2610, 3690)		552 (-2660, 3770)
Construction (1.53)	901 (-2420, 4220)	1690 (-1520, 4890)		1730 (-1550, 5000)
Hospitality (3.17)	484 (-2850, 3820)	1230 (-1980, 4450)		1260 (-2030, 4550)
Distribution (1.06)	777 (-2530, 4090)	1490 (-1700, 4690)		1550 (-1720, 4810)
Finance (4.14)	766 (-2560, 4090)	1550 (-1660, 4760)		1620 (-1660, 4910)
Service (5.46)	814 (-2510, 4140)	1550 (-1650, 4760)		1600 (-1680, 4880)
Mean Years of Schooling (1.54)	-144* (-265, -22.4)	-43.5 (-165, 77.7)		-39.9 (-164, 84.7)
Energy Consumption (4990)				
Telephone Subscribers (465)	-0.224 (-0.858, 0.411)	-0.428 (-1.04, 0.186)		-0.619 (-1.28, 0.0433)
Roads Paved (20.9)	10.9* (1.47, 20.3)	23.5* (13.6, 33.4)		24.2* (14, 34.3)
Country	Varies	Varies	Varies	Varies
Year	Varies	Varies	Varies	Varies
Constant	-69600 (-402000, 262000)	-143000 (-463000, 178000)	5860* (4650, 7060)	-148000 (-475000, 180000)
Adjusted R²	0.988	0.989	0.984	0.989

*All estimates are rounded to three significant digits. Below each variable name is its standard deviation. Below each coefficient estimate is its 95% confidence interval. All estimates significant at the 0.05 level are followed by a *.*

Table 10: Fixed Effects Model Predicting Internet Access

Internet Access (27.4)				
	Excluding Interactive Effects	Including Interactive Effects	Including Interactive Effects, Excluding Controls	Including Interactive Effects, Excluding Outlier
N	368	368	419	388
Union Strength (13.3)	0.139 (-0.209, 0.487)	-0.656 (-1.68, 0.366)	-1.72* (-2.65, -0.798)	-0.832 (-1.92, 0.259)
Globalization (15.5)	-0.0952 (-0.364, 0.173)	-0.322 (-0.706, 0.0615)	-0.885* (-1.17, -0.602)	-0.377 (-0.785, 0.0315)
Union Strength * Globalization		0.0116 (-0.00243, 0.0256)	0.025* (0.0118, 0.0382)	0.0137 (-0.00102, 0.0285)
Wage Coordination (1.36)	-0.809 (-2.47, 0.846)	-0.8 (-2.45, 0.851)		-0.622 (-2.48, 1.24)
Executive is Centrist (Dummy)	4.93* (1.25, 8.6)	4.81* (1.15, 8.48)		5.04* (1.26, 8.82)
Executive is Left of Center (Dummy)	0.682 (-0.943, 2.31)	0.616 (-1.01, 2.24)		0.594 (-1.09, 2.28)
ICT (0.921)	-1.23 (-2.69, 0.232)	-1.16 (-2.62, 0.3)		-1.16 (-2.69, 0.372)
Manufacturing (4.90)	52.2* (10.3, 94.1)	52.5* (10.8, 94.3)		53.6* (10.8, 96.4)
Mining (0.46)	68* (24.8, 111)	65.9* (22.8, 109)		66.5* (22.3, 111)
Agriculture (4.87)	53.7* (11.8, 95.5)	53.9* (12.2, 95.7)		55.1* (12.3, 97.8)
Utilities (0.366)	40.3 (-2.52, 83.2)	39.3 (-3.45, 82.1)		39.6* (-4.19, 83.4)
Construction (1.53)	49.8* (8.01, 91.6)	50.3* (8.62, 92)		51.5* (8.74, 94.2)
Hospitality (3.17)	53.9* (11.7, 96)	54.1* (12, 96.1)		55.1* (12, 98.2)
Distribution (1.06)	52.7* (10.8, 94.6)	53.1* (11.3, 95)		53.9* (11.1, 96.8)
Finance (4.14)	51.5* (9.45, 93.5)	51.8* (9.88, 93.7)		52.8* (9.82, 95.7)
Service (5.46)	51.9* (10, 93.8)	52.1* (10.4, 93.9)		53* (10.2, 95.7)
Mean Years of Schooling (1.54)	-0.985 (-2.93, 0.962)	-0.579 (-2.58, 1.42)		-0.436 (-2.5, 1.63)
Energy Consumption (4990)	-0.00236* (-0.00383, -0.00089)	-0.0026* (-0.00409, -0.00111)		-0.0026* (-0.00414, -0.00106)
Telephone Subscribers (465)	-0.00622 (-0.0134, 0.000958)	-0.00713 (-0.0144, 0.000109)		-0.00575 (-0.0136, 0.00207)
Roads Paved (20.9)	-0.225* (-0.357, -0.0931)	-0.212* (-0.345, -0.0795)		-0.218* (-0.355, -0.0808)
Country	Varies	Varies	Varies	Varies
Year	Varies	Varies	Varies	Varies
Constant	-5180* (-9370, -993)	-5190* (-9370, -1020)	62.7* (41.5, 83.9)	-5290* (-9570, -1010)
Adjusted R²	0.958	0.958	0.933	0.956

*All estimates are rounded to three significant digits. Below each variable name is its standard deviation. Below each coefficient estimate is its 95% confidence interval. All estimates significant at the 0.05 level are followed by a * .*

Table 11: Fixed Effects Model Predicting Number of Register Takeoffs

Takeoffs (15.6)				
	Excluding Interactive Effects	Including Interactive Effects	Including Interactive Effects, Excluding Controls	Including Interactive Effects, Excluding Outlier
N	524	524	608	534
Union Strength (13.3)	-0.293* (-0.487, -0.0987)	-0.837* (-1.26, -0.412)	0.0063 (-0.355, 0.367)	-0.745* (-1.19, -0.302)
Globalization (15.5)	-0.367* (-0.527, -0.207)	-0.567* (-0.778, -0.356)	-0.0974 (-0.259, 0.0644)	-0.578* (-0.802, -0.354)
Union Strength * Globalization		0.00902* (0.00274, 0.0153)	-0.00418 (-0.00933, 0.000974)	0.00734* (0.000798, 0.0139)
Wage Coordination (1.36)	1.43* (0.596, 2.25)	1.27* (0.44, 2.1)		0.979* (0.106, 1.85)
Executive is Centrist (Dummy)	3.14* (0.787, 5.49)	2.85* (0.508, 5.19)		3.04* (0.665, 5.42)
Executive is Left of Center (Dummy)	1.91* (0.657, 3.17)	1.92* (0.68, 3.17)		2.16* (0.88, 3.43)
ICT (0.921)	-2.93* (-4.11, -1.75)	-2.65* (-3.83, -1.46)		-2.72* (-3.96, -1.48)
Manufacturing (4.90)	-21.4 (-50.8, 7.99)	-17.7 (-47, 11.6)		-22.5 (-52.3, 7.2)
Mining (0.46)	-19.6 (-49.8, 10.6)	-17.4 (-47.4, 12.6)		-22.5 (-53, 7.92)
Agriculture (4.87)	-22.3 (-51.7, 7.21)	-18.9 (-48.2, 10.5)		-23.9 (-53.7, 5.92)
Utilities (0.366)	-26.8 (-55.8, 2.12)	-24 (-52.9, 4.76)		-26.9 (-56.1, 2.26)
Construction (1.53)	-19.1 (-48.6, 10.3)	-15.4 (-44.7, 13.9)		-20.2 (-50, 9.55)
Hospitality (3.17)	-21.4 (-51, 8.09)	-18 (-47.4, 11.4)		-22.8 (-52.7, 7.01)
Distribution (1.06)	-20.1 (-49.4, 9.24)	-16.7 (-45.9, 12.5)		-21.1 (-50.7, 8.53)
Finance (4.14)	-21.1 (-50.5, 8.41)	-17.3 (-46.7, 12)		-22.3 (-52.1, 7.55)
Service (5.46)	-21.2 (-50.6, 8.3)	-17.6 (-47, 11.7)		-22.5 (-52.2, 7.28)
Mean Years of Schooling (1.54)	0.615 (-0.467, 1.7)	1.01 (-0.1, 2.12)		0.984 (-0.146, 2.11)
Energy Consumption (4990)	0.00103* (0.000207, 0.00184)	0.000691 (-0.000153, 0.00154)		0.000811 (-0.000544, 0.00168)
Telephone Subscribers (465)	-0.000339 (-0.00596, 0.00528)	-0.00131 (-0.00694, 0.00431)		-0.00135 (-0.00738, 0.00468)
Roads Paved (20.9)	-0.0307 (-0.114, 0.053)	0.0284 (-0.0643, 0.121)		0.0385 (-0.0562, 0.133)
Country	Varies	Varies	Varies	Varies
Year	Varies	Varies	Varies	Varies
Constant	2140 (-799, 5080)	1800 (-1130, 4730)	21.9* (9.99, 33.7)	2280 (-694, 5250)
Adjusted R²	0.900	0.902	0.839	0.902

*All estimates are rounded to three significant digits. Below each variable name is its standard deviation. Below each coefficient estimate is its 95% confidence interval. All estimates significant at the 0.05 level are followed by a * .*

Table 12: Fixed Effects Model Predicting Investment in Unemployment Insurance

Unemployment Benefits (0.864)				
	Excluding Interactive Effects	Including Interactive Effects	Including Interactive Effects, Excluding Controls	Including Interactive Effects, Excluding Outlier
N	427	427	513	388
Union Strength (13.3)	0.0141 (-0.00368, 0.032)	-0.0719* (-0.118, -0.0262)	-0.0431* (-0.0824, -0.00369)	-0.0691* (-0.116, -0.0225)
Globalization (15.5)	0.0444* (0.0294, 0.0595)	0.0154 (-0.00516, 0.0359)	0.00862 (-0.00655, 0.0238)	0.0232* (0.00172, 0.0446)
Union Strength * Globalization		0.00135* (0.000685, 0.00201)	0.000853* (0.000288, 0.00142)	0.00129* (0.000622, 0.00196)
Wage Coordination (1.36)	-0.119* (-0.204, -0.0346)	-0.142* (-0.225, -0.0578)		-0.121* (-0.21, -0.0329)
Executive is Centrist (Dummy)	-0.0783 (-0.293, 0.136)	-0.107 (-0.318, 0.103)		-0.123 (-0.336, 0.0901)
Executive is Left of Center (Dummy)	-0.00558 (-0.108, 0.0966)	-0.00672 (-0.107, 0.0934)		0.000634 (-0.102, 0.103)
ICT (0.921)	0.0134 (-0.0821, 0.109)	0.0331 (-0.0609, 0.127)		0.0358 (-0.0615, 0.133)
Manufacturing (4.90)	-0.0602 (-2.57, 2.45)	0.308 (-2.15, 2.77)		0.405 (-2.08, 2.89)
Mining (0.46)	0.416 (-2.15, 2.99)	0.469 (-2.05, 2.99)		0.598 (-1.94, 3.14)
Agriculture (4.87)	0.0613 (-2.45, 2.57)	0.415 (-2.05, 2.88)		0.501 (-1.98, 2.99)
Utilities (0.366)	0.0045 (-2.49, 2.5)	0.257 (-2.19, 2.71)		0.245 (-2.22, 2.71)
Construction (1.53)	-0.0399 (-2.54, 2.46)	0.348 (-2.11, 2.81)		0.441 (-2.04, 2.92)
Hospitality (3.17)	-0.0508 (-2.57, 2.47)	0.297 (-2.18, 2.77)		0.352 (-2.14, 2.85)
Distribution (1.06)	0.0594 (-2.45, 2.57)	0.399 (-2.07, 2.87)		0.49 (-2, 2.98)
Finance (4.14)	0.182 (-2.33, 2.69)	0.536 (-1.93, 3)		0.662 (-1.83, 3.15)
Service (5.46)	0.195 (-2.31, 2.7)	0.541 (-1.92, 3)		0.627 (-1.86, 3.11)
Mean Years of Schooling (1.54)	0.155* (0.0554, 0.254)	0.214* (0.113, 0.316)		0.216* (0.112, 0.319)
Energy Consumption (4990)	0.0000351 (-0.0000462, 0.000116)	0.0000119 (-0.0000685, 0.0000923)		-0.0000632 (-0.0000884, 0.0000758)
Telephone Subscribers (465)	-0.000194 (-0.000667, 0.000279)	-0.000279 (-0.000744, 0.000187)		-0.000427 (-0.000931, 0.0000766)
Roads Paved (20.9)	-0.00774 (-0.0159, 0.000373)	-0.00175 (-0.0102, 0.00674)		-0.000921 (-0.00951, 0.00767)
Country	Varies	Varies	Varies	Varies
Year	Varies	Varies	Varies	Varies
Constant	-8.81 (-259, 242)	-42.3 (-288, 204)	0.414 (-0.725, 1.55)	-51.2 (-299, 197)
Adjusted R²	0.825	0.832	0.703	0.831

*All estimates are rounded to three significant digits. Below each variable name is its standard deviation. Below each coefficient estimate is its 95% confidence interval. All estimates significant at the 0.05 level are followed by a *.*

Table 13: Average Union Strength, Union Density, Union Centralization, and Level of Wage Coordination Derived from ICTWSS

Mean Union Strength (1960 – 2010)								
	Union Density		Union Centralization		Wage Coordination		Union Strength	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Australia	0.39	17	0.51	7	2.73	19	0.21	10
Austria	0.50	11	0.96	1	4.45	1	0.48	1
Belgium	0.50	12	0.46	10	4.20	3	0.23	8
Bulgaria	0.44	14	0.45	11	2.26	22	0.25	6
Canada	0.32	22	0.28	25	1.24	28	0.09	24
Cyprus	0.66	3	0.25	28	2.00	25 (Tied)	0.17	11
Czech Republic	0.30	26	0.26	27	2.52	20	0.07	27
Denmark	0.70	2	0.53	5	4.04	6	0.37	3
Estonia	0.21	29	0.34	17	1.00	31 (Tied)	0.07	28
Finland	0.64	5	0.39	14	3.96	9	0.25	7
France	0.15	34	0.21	33	2.16	23	0.03	33
Germany	0.30	24	0.44	12	4.00	7 (Tied)	0.13	17
Greece	0.32	21	0.33	18	4.00	7 (Tied)	0.10	23
Hungary	0.36	20	0.24	30	2.00	25 (Tied)	0.06	30
Ireland	0.53	9	0.41	13	3.10	16	0.21	9
Italy	0.38	18	0.32	21	2.94	18	0.12	19
Japan	0.28	27	0.22	31	3.76	10	0.06	29
Latvia	0.19	30	0.50	9	1.00	31 (Tied)	0.11	20
Lithuania	0.15	33	0.31	24	1.00	31 (Tied)	0.04	32
Luxembourg	0.46	13	0.32	20	2.08	24	0.14	16
Malta	0.60	6	0.37	15	1.14	30	0.14	15
Netherlands	0.30	25	0.54	4	4.08	4 (Tied)	0.16	14
New Zealand	0.43	15	0.27	26	3.12	15	0.12	18
Norway	0.56	7	0.58	2	4.27	2	0.33	5
Poland	0.36	19	0.35	16	1.00	31 (Tied)	0.16	13
Portugal	0.52	10	0.32	23	2.97	17	0.10	21
Romania	0.54	8	0.24	29	2.44	21	0.10	22
Slovakia	0.32	23	0.51	8	3.19	14	0.16	12
Slovenia	0.65	4	0.52	6	3.67	12	0.37	4
Spain	0.19	32	0.33	19	3.59	13	0.05	31
Sweden	0.76	1	0.54	3	4.08	4 (Tied)	0.41	2
Switzerland	0.26	28	0.32	22	3.71	11	0.09	26
United Kingdom	0.40	16	0.21	32	1.80	27	0.09	25
United States	0.19	31	0.13	34	1.16	29	0.03	34

Union density is net union membership as a proportion wage and salary earners in employment. Centralization is a summary measure of centralization of wage bargaining, taking into accounts both union authority and union concentration at multiple levels (derived from Iversen's centralization index) which ranges from 0-1. Wage coordination is a five point scale measuring with 1 indicating fragmented bargaining and 5 indicating economy wide bargains. Union Strength is an index created by multiplying union density and union centralization.

SOURCE: ICTWSS Database

Table 14: Total FDI Outflow in the UK by Sector 1985-2008 & 1993-2008

Total FDI Outflow in the UK by Sector (Pound Sterling)	1985-2008	1993-2008
Agriculture & Fishing	17	-778
Mining & Quarrying	158,910	146,966
Manufacturing	315,367	261,527
Electricity, Gas & Water		26,680
Construction	11,550	10,179
Trade & Repairs	81,904	71,332
Hotels & Restaurants		11,083
Transports, Storage & Communication		171,346
Financial Intermediation	208,983	201,705
Real Estate, Renting & Business Activities		51,932
Other Services	27,169	5,344
TOTAL	1,077,898	966,128
SOURCE: OECD (2013)		

Table 15: Percent of Total Imports by Sector in the UK (2008, 2009, & 2010)

Percent of Total Imports in the UK by Sector	2008	2009	2010
Agriculture, Forestry and Fishing	0.28%	0.31%	0.39%
Mining and Quarrying	0.93%	0.81%	1.13%
Manufacturing	28.08%	26.65%	30.45%
Construction	0.66%	0.51%	0.71%
Wholesale, Retail Trade and Repair	46.70%	47.74%	47.16%
Transportation and Storage	2.83%	3.27%	2.89%
Information and Communication	2.98%	3.73%	3.32%
Financial and Insurance Activities	3.50%	3.27%	1.17%
Real Estate Activities	0.20%	0.19%	0.10%
Professional, Scientific and Technical Activities	4.25%	4.74%	3.49%
Administrative and Support Service Activities	1.37%	1.35%	1.28%
Accommodation and Food Services; Non Market Services	0.85%	0.74%	0.94%
TOTAL	100%	100%	100%
SOURCE: OECD (2013)			

Table 16: Subjects of Motions, Composites, & Statements Made at the Annual Trades Union Congress, by Sector (1997-2012)

	Type of Document	Wages	Benefits	Health/Safety	Employ. Protect.	Social Spend.	Skills	Infra.	Product-ivity	Redist.	Total
Manufacturing	Motions	0	3	0	2	7	8	1	2	2	37
	Composites: Total	13	19	5	9	17	14	4	4	4	60
	Composites: Mover	5	7	1	6	5	10	1	3	1	24
	Composites: Seconder	4	6	1	1	5	1	1	1	1	15
	Composites: Supporter	4	6	3	2	7	3	2	0	2	21
	Statements	32	22	13	22	55	37	18	6	19	276
Construction	Motions	8	8	6	2	2	2	0	0	0	21
	Composites: Total	8	13	12	6	7	6	1	1	1	36
	Composites: Mover	3	3	7	2	1	0	0	0	0	12
	Composites: Seconder	0	1	0	0	2	3	0	0	1	6
	Composites: Supporter	5	9	5	4	4	3	1	1	0	17
	Statements	29	26	26	5	18	16	2	0	2	75

	Type of Document	Int'l Comp.	Other Global-ization	Sector Invest-ment	Int'l Labor Mov't	Discrim-ination	Union Rights	Precar-iousness	General Econ.	Other Politics	Total
Manufacturing	Motions	9	1	7	3	5	6	1	9	3	37
	Composites: Total	9	0	4	3	9	17	5	5	5	60
	Composites: Mover	5	0	4	2	3	9	2	4	2	24
	Composites: Seconder	2	0	0	1	2	4	2	1	2	15
	Composites: Supporter	2	0	0	0	4	4	1	0	1	21
	Statements	24	21	15	8	56	27	18	41	27	276
Construction	Motions	0	0	2	0	2	5	7	0	0	21
	Composites: Total	3	0	5	0	4	11	7	1	2	36
	Composites: Mover	1	0	1	0	0	3	3	0	0	12
	Composites: Seconder	0	0	2	0	1	2	0	0	1	6
	Composites: Supporter	2	0	2	0	3	6	4	1	1	17
	Statements	1	0	13	3	0	22	20	2	3	75

Table 17: Subjects of Motions, Composites, & Statements Made at the Annual Trades Union Congress, by Sector, as Percent (1997-2012)

	Type of Document	Wages	Benefits	Health/Safety	Employ. Protect.	Social Spend.	Skills	Infra.	Product-ivity	Redist.
Manufacturing	Motions	0.0%	8.1%	0.0%	5.4%	18.9%	21.6%	2.7%	5.4%	5.4%
	Composites: Total	21.7%	31.7%	8.3%	15.0%	28.3%	23.3%	6.7%	6.7%	6.7%
	Composites: Mover	20.8%	29.2%	4.2%	25.0%	20.8%	41.7%	4.2%	12.5%	4.2%
	Composites: Seconder	26.7%	40.0%	6.7%	6.7%	33.3%	6.7%	6.7%	6.7%	6.7%
	Composites: Supporter	19.0%	28.6%	14.3%	9.5%	33.3%	14.3%	9.5%	0.0%	9.5%
	Statements	11.6%	8.0%	4.7%	8.0%	19.9%	13.4%	6.5%	2.2%	6.9%
Construction	Motions	38.1%	38.1%	28.6%	9.5%	9.5%	9.5%	0.0%	0.0%	0.0%
	Composites: Total	22.2%	36.1%	33.3%	16.7%	19.4%	16.7%	2.8%	2.8%	2.8%
	Composites: Mover	25.0%	25.0%	58.3%	16.7%	8.3%	0.0%	0.0%	0.0%	0.0%
	Composites: Seconder	0.0%	16.7%	0.0%	0.0%	33.3%	50.0%	0.0%	0.0%	16.7%
	Composites: Supporter	29.4%	52.9%	29.4%	23.5%	23.5%	17.6%	5.9%	5.9%	0.0%
	Statements	38.7%	34.7%	34.7%	6.7%	24.0%	21.3%	2.7%	0.0%	2.7%

	Type of Document	Int'l Competition	Other Global-ization	Sector Invest-ment	Int'l Labor Mov't	Discrim-ination	Union Rights	Precar-iousness	General Economy	Other Politics
Manufacturing	Motions	24.3%	2.7%	18.9%	8.1%	13.5%	16.2%	2.7%	24.3%	8.1%
	Composites: Total	15.0%	0.0%	6.7%	5.0%	15.0%	28.3%	8.3%	8.3%	8.3%
	Composites: Mover	20.8%	0.0%	16.7%	8.3%	12.5%	37.5%	8.3%	16.7%	8.3%
	Composites: Seconder	13.3%	0.0%	0.0%	6.7%	13.3%	26.7%	13.3%	6.7%	13.3%
	Composites: Supporter	9.5%	0.0%	0.0%	0.0%	19.0%	19.0%	4.8%	0.0%	4.8%
	Statements	8.7%	7.6%	5.4%	2.9%	20.3%	9.8%	6.5%	14.9%	9.8%
Construction	Motions	0.0%	0.0%	9.5%	0.0%	9.5%	23.8%	33.3%	0.0%	0.0%
	Composites: Total	8.3%	0.0%	13.9%	0.0%	11.1%	30.6%	19.4%	2.8%	5.6%
	Composites: Mover	8.3%	0.0%	8.3%	0.0%	0.0%	25.0%	25.0%	0.0%	0.0%
	Composites: Seconder	0.0%	0.0%	33.3%	0.0%	16.7%	33.3%	0.0%	0.0%	16.7%
	Composites: Supporter	11.8%	0.0%	11.8%	0.0%	17.6%	35.3%	23.5%	5.9%	5.9%
	Statements	1.3%	0.0%	17.3%	4.0%	0.0%	29.3%	26.7%	2.7%	4.0%

Table 18: Motions, Composites, & Statements Made in Regards to Key Subject at the Annual Trades Union Congress, by Sector, as Absolute and Percent (1997-2012) for

Motions						
	Wages & Benefits	Employment	Skill	Infrastructure	Social Spending	Total
Manufacturing	3 (14.3%)	2 (9.5%)	8 (38.1%)	1 (4.8%)	7 (33.3%)	21
Construction	9 (60%)	2 (13.3%)	2 (13.3%)	0 (0%)	2 (13.3%)	15
Chi-Square = 9.65 DF = 4 P = 0.047						
Composites (Mover, Seconder, or Supporter)						
	Wages & Benefits	Employment	Skill	Infrastructure	Social Spending	Total
Manufacturing	21 (32.3%)	9 (13.8%)	14 (21.5%)	4 (6.2%)	17 (26.2%)	65
Construction	15 (42.9%)	6 (17.1%)	6 (17.1%)	1 (2.9%)	7 (20%)	35
Chi-Square = 1.94 DF = 4 P = 0.75						
Statements						
	Wages & Benefits	Employment	Skill	Infrastructure	Social Spending	Total
Manufacturing	41 (23.7%)	22 (12.7%)	37 (21.4%)	18 (10.4%)	55 (31.8%)	173
Construction	36 (46.8%)	5 (6.5%)	16 (20.8%)	2 (2.6%)	18 (23.4%)	77
Chi-Square = 11.93 DF = 4 P = 0.018						

Figure 1: Distribution of Globalization Scores (1970-2009)

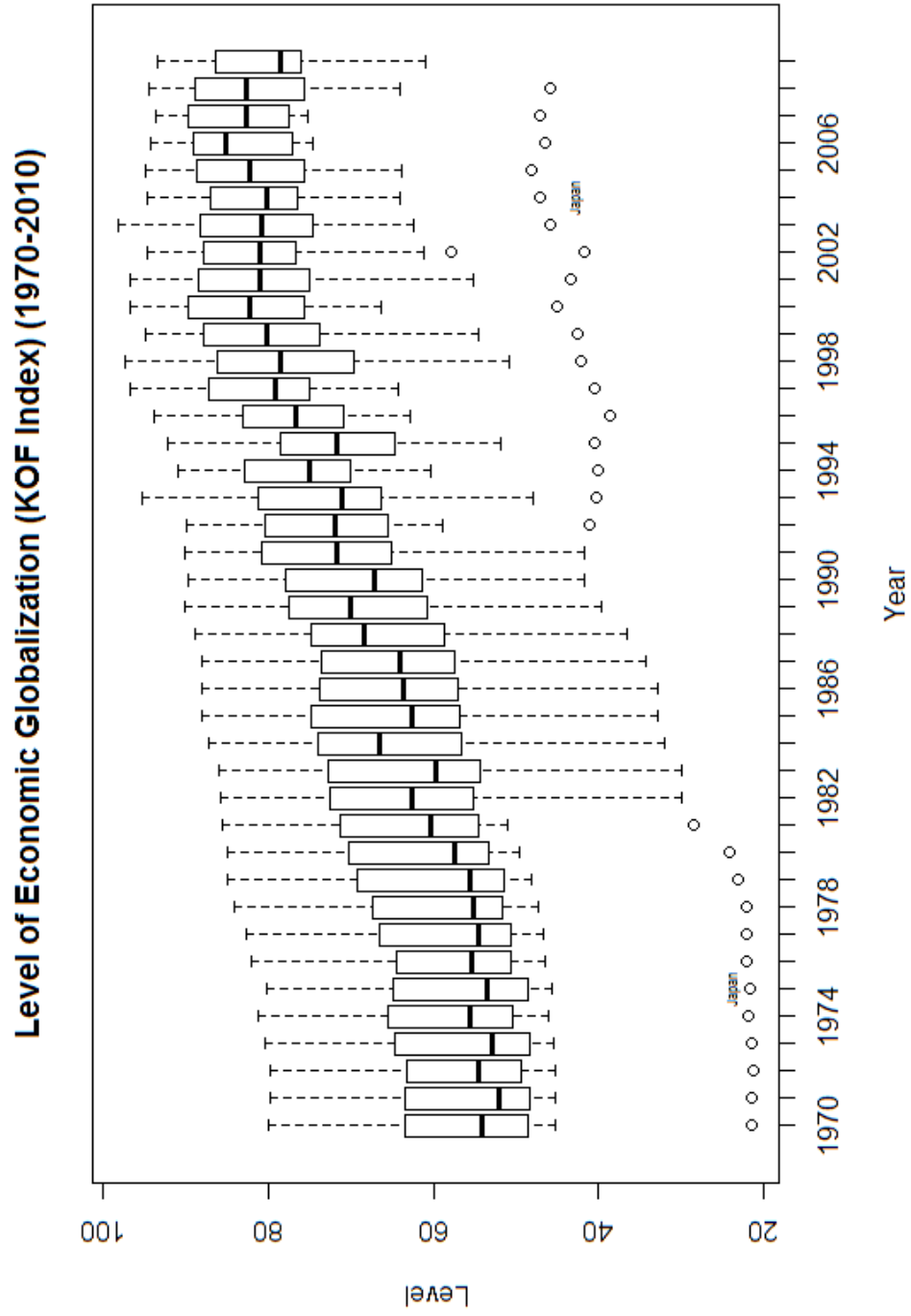


Figure 2: Distribution of Union Strength (1970-2010)

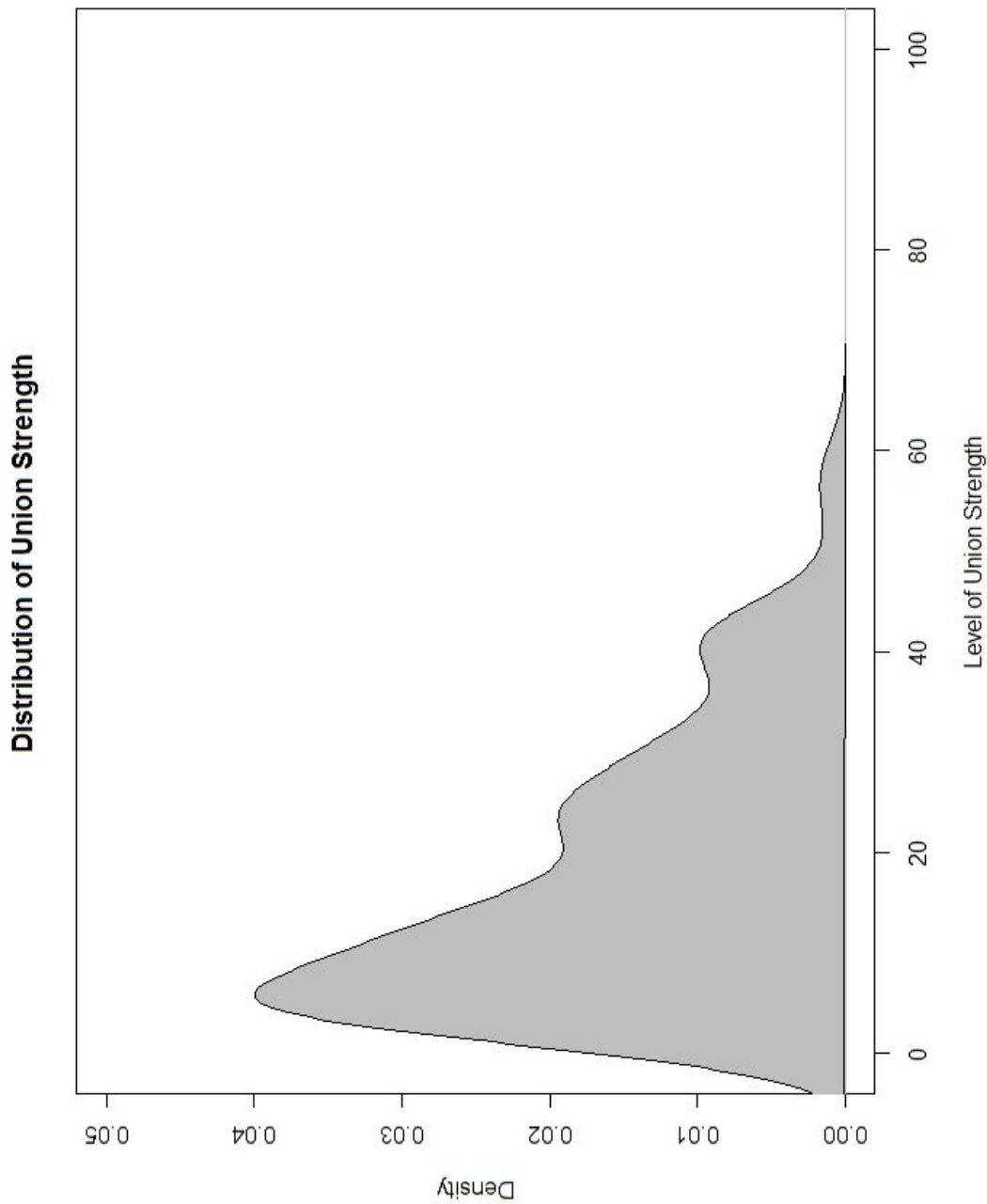


Figure 3: Distribution of Labor Share Over Time (1970-2009)

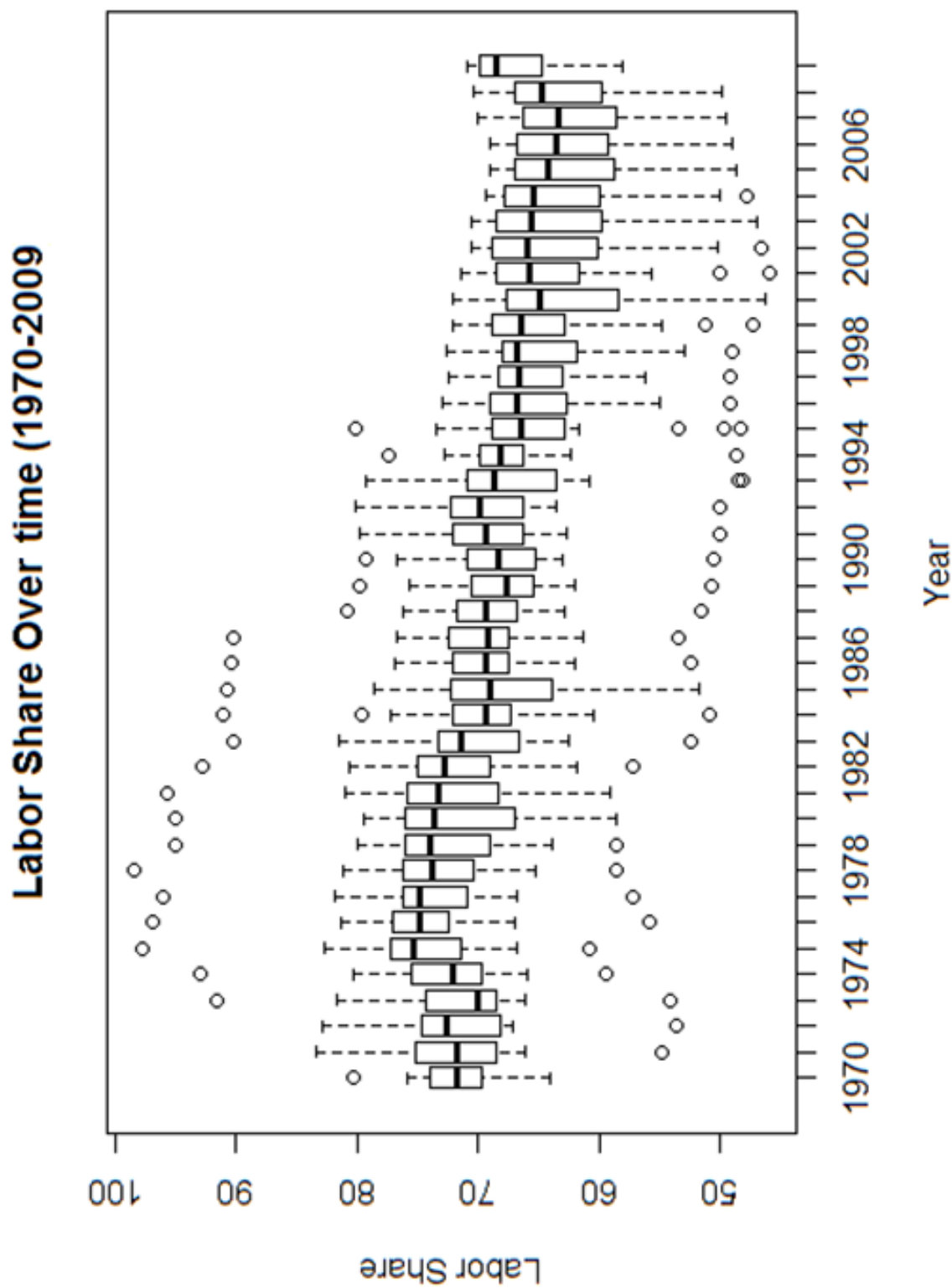


Figure 4: The Predicted Effect of a One Standard Deviation increase in Union Strength on Labor Share, Contingent on the Level of Globalization, Overlaying the Distribution of Globalization in the Sample

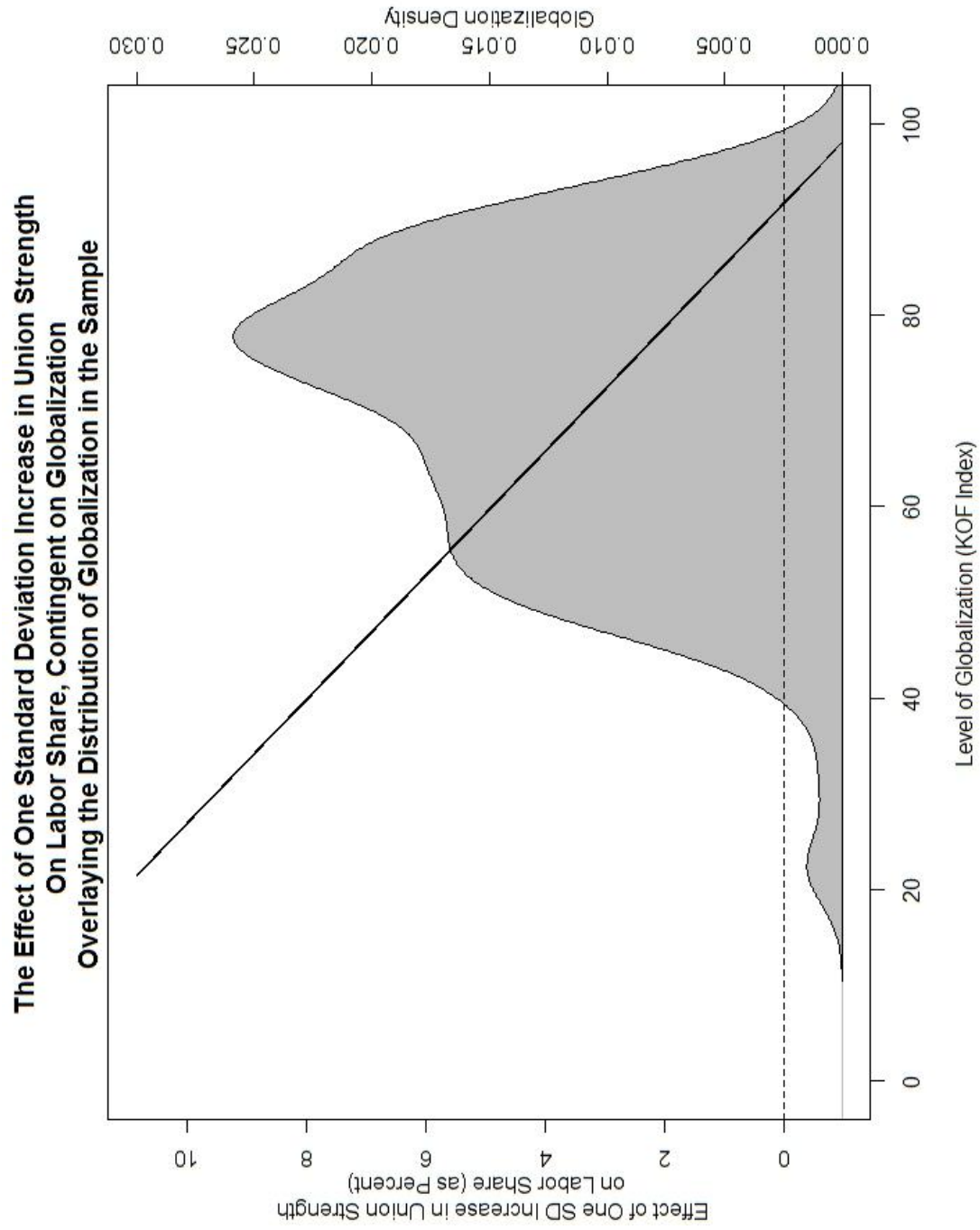


Figure 5: The Predicted Effect of a One Standard Deviation increase in Union Strength on Severance Pay at 4 Years, Contingent on the Level of Globalization

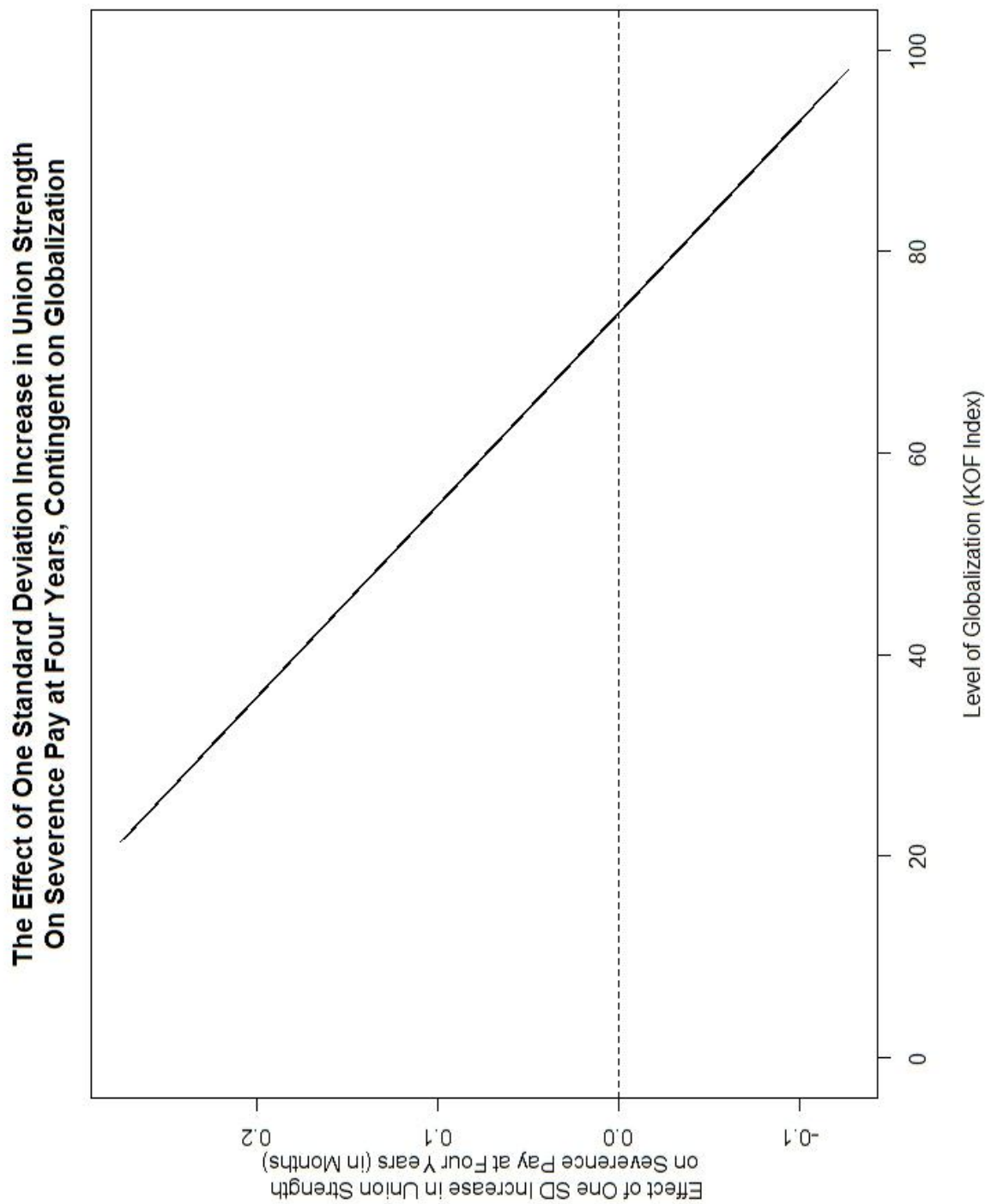


Figure 6: The Predicted Effect of a One Standard Deviation increase in Union Strength on Severance Pay at 20 Years, Contingent on the Level of Globalization

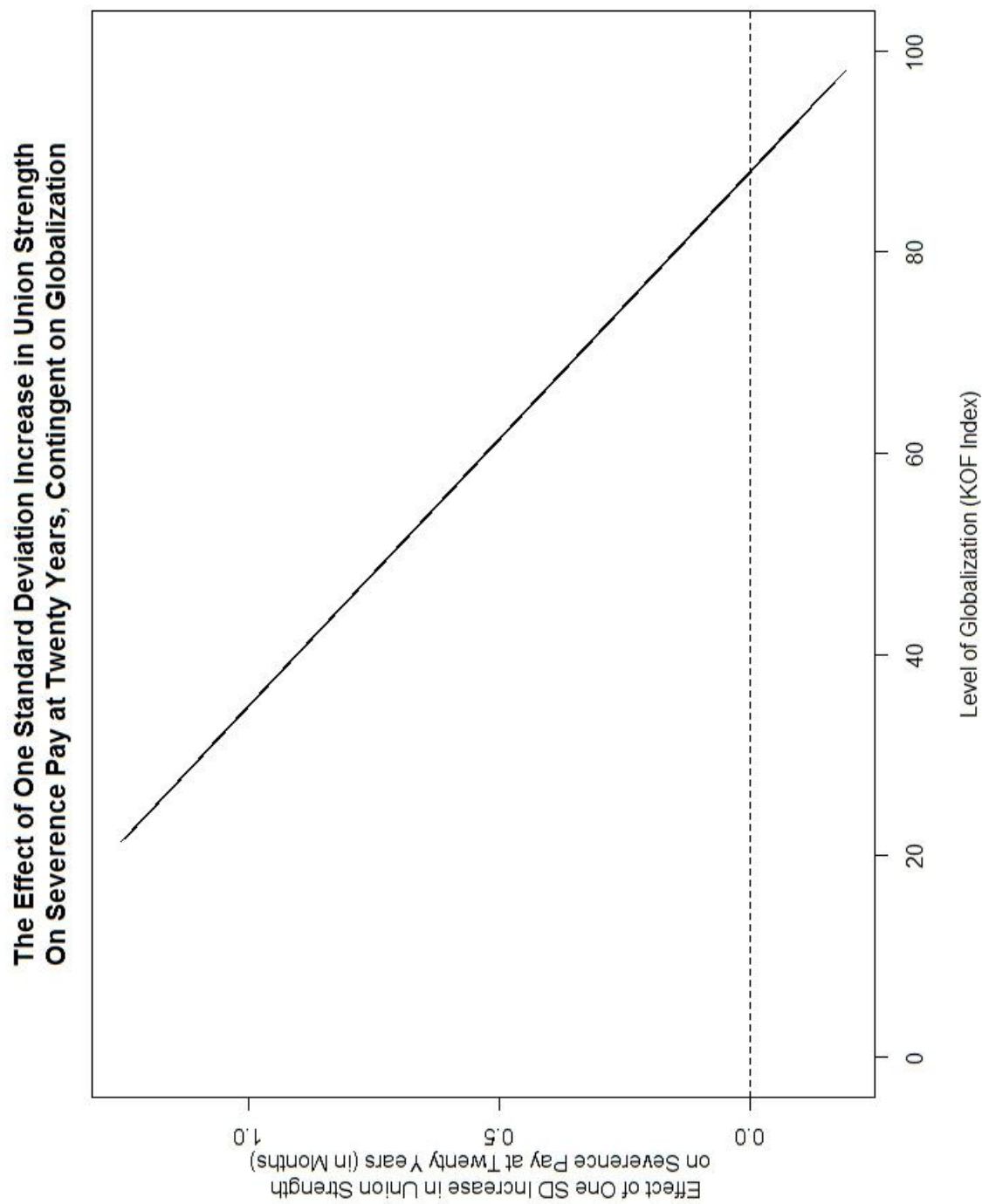


Figure 7: The Effect of One Standard Deviation Increase in Union Strength on Advance notice at 9 Months, 4 Years, and 20 Years, Contingent on Globalization

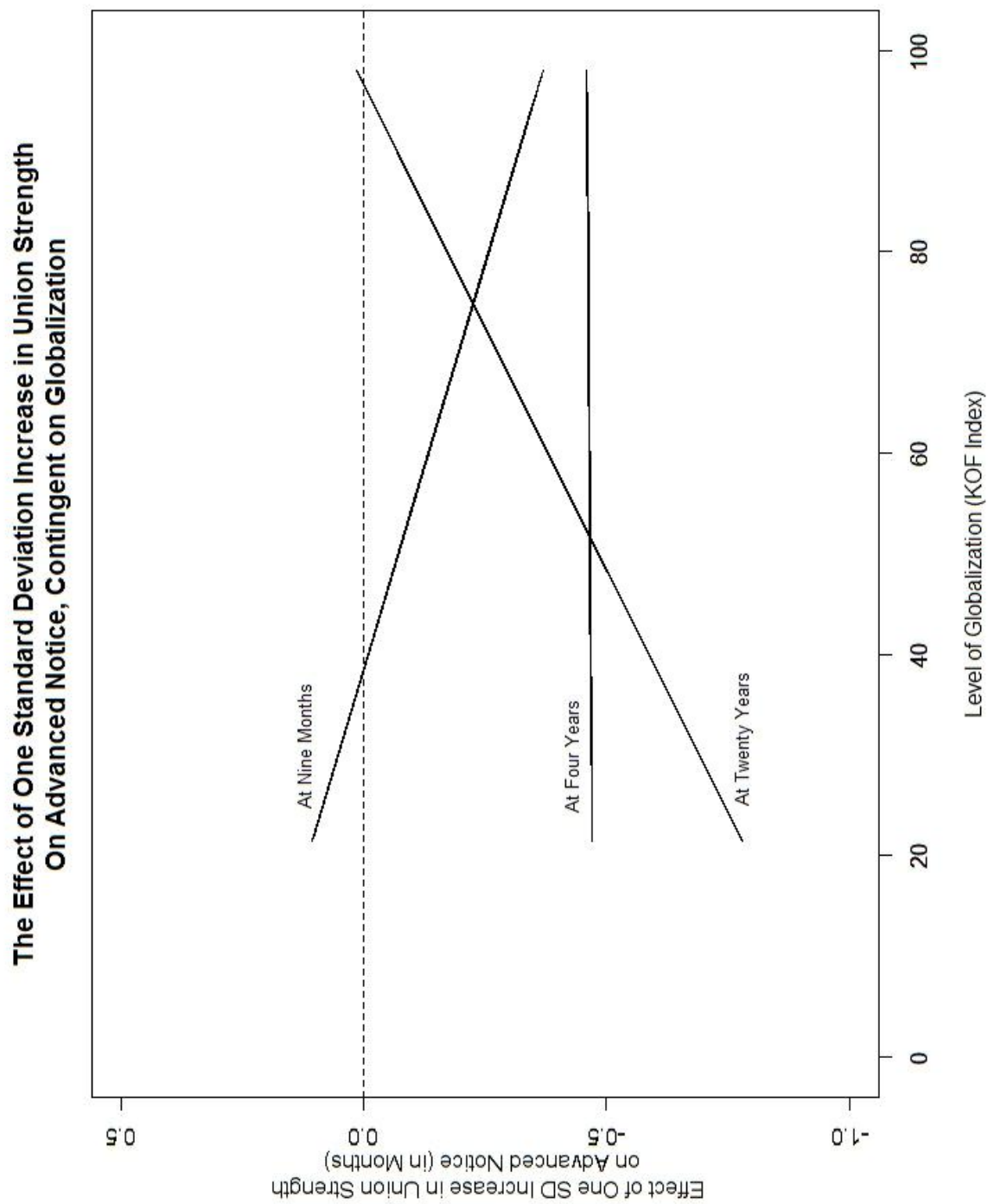


Figure 8: Percent Decrease in Unemployment Rate Resulting From One Standard Deviation Increase in Union Strength at Important Levels of Globalization

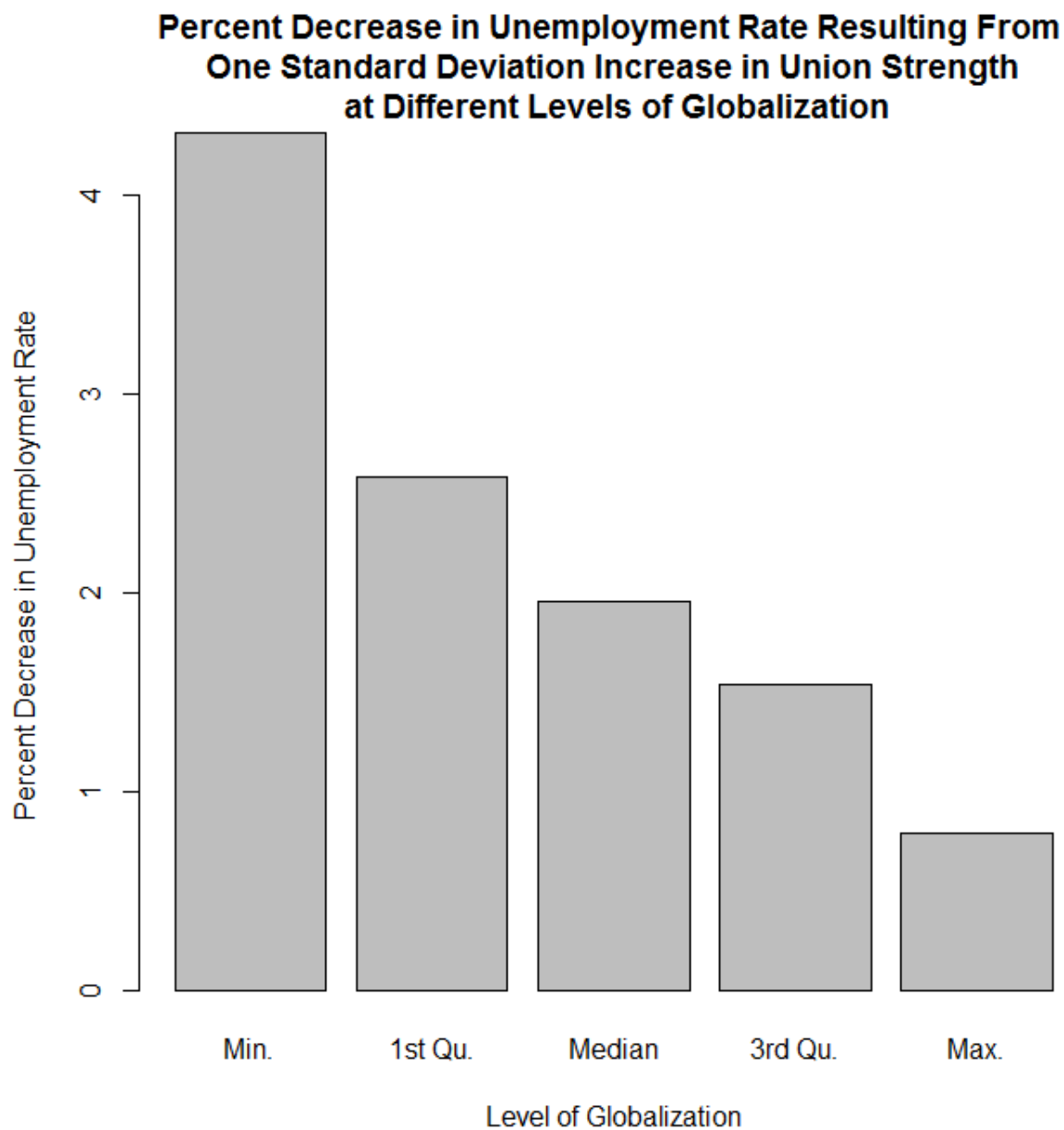


Figure 9: The Effect of One Standard Deviation Increase in Union Strength on Training Expenditure, Contingent on Globalization, Overlaying the Sample Distribution of Globalization Scores

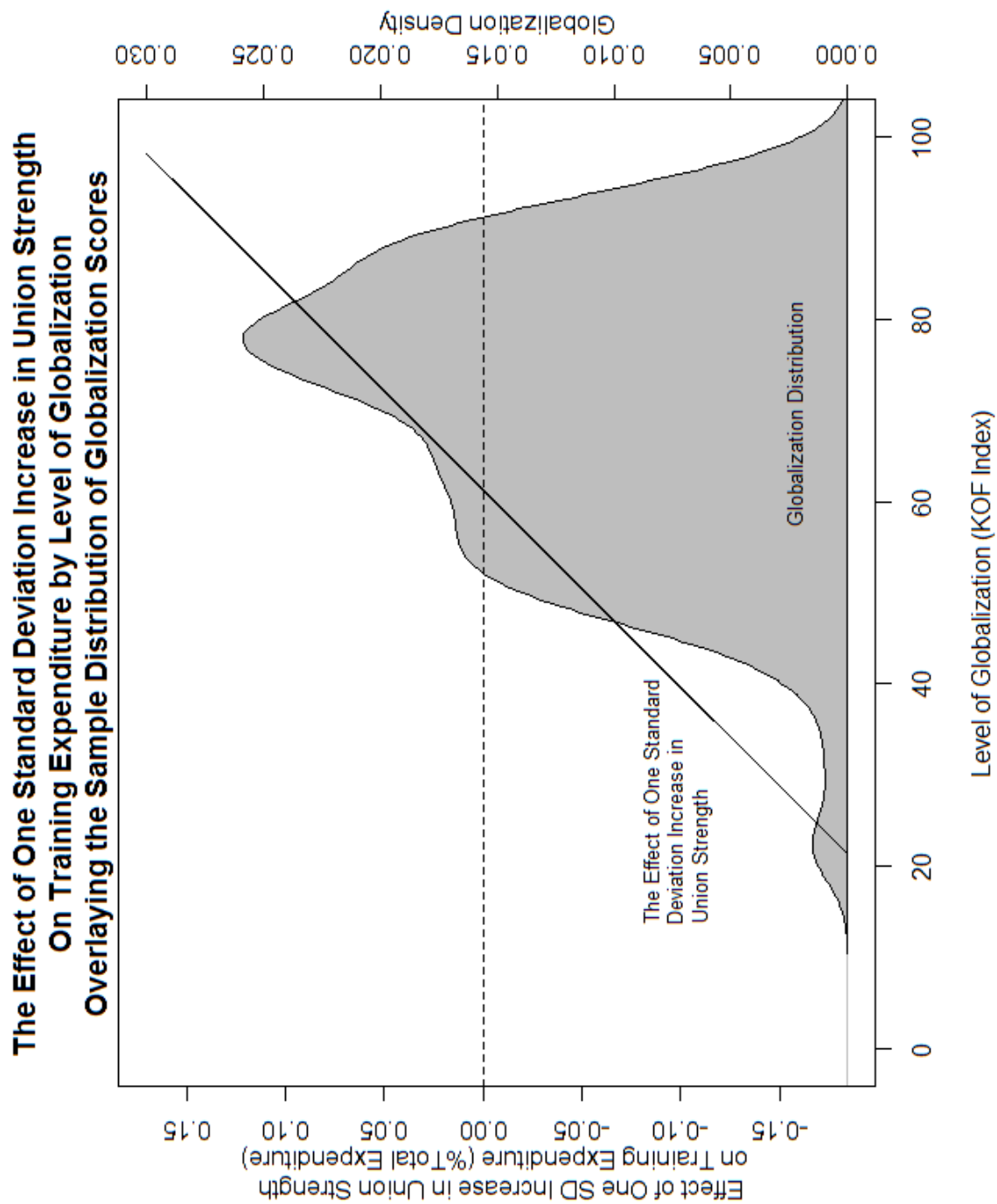


Figure 10: The Effect of One Standard Deviation Increase in Union Strength on Energy Consumption, Contingent on Globalization

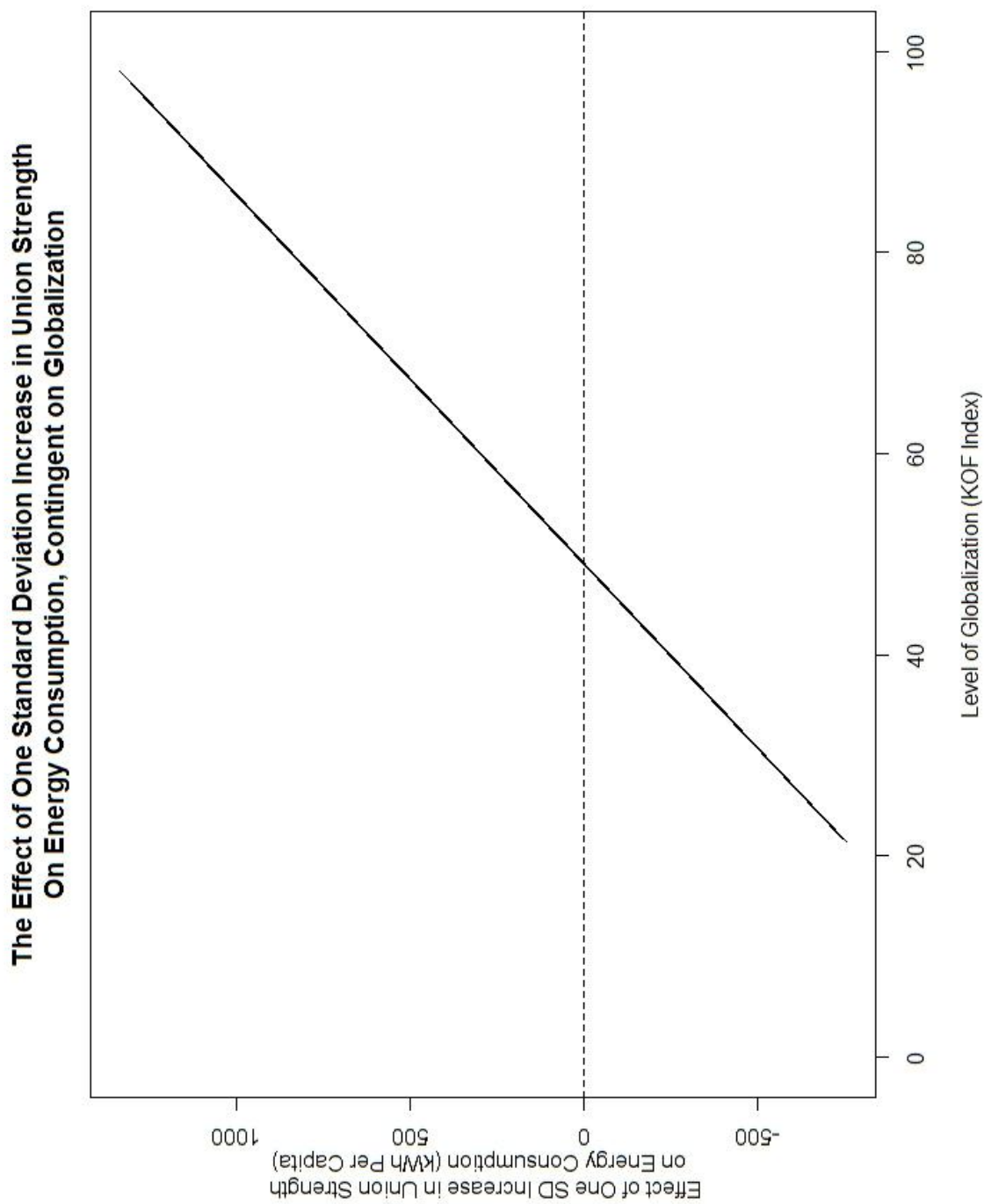


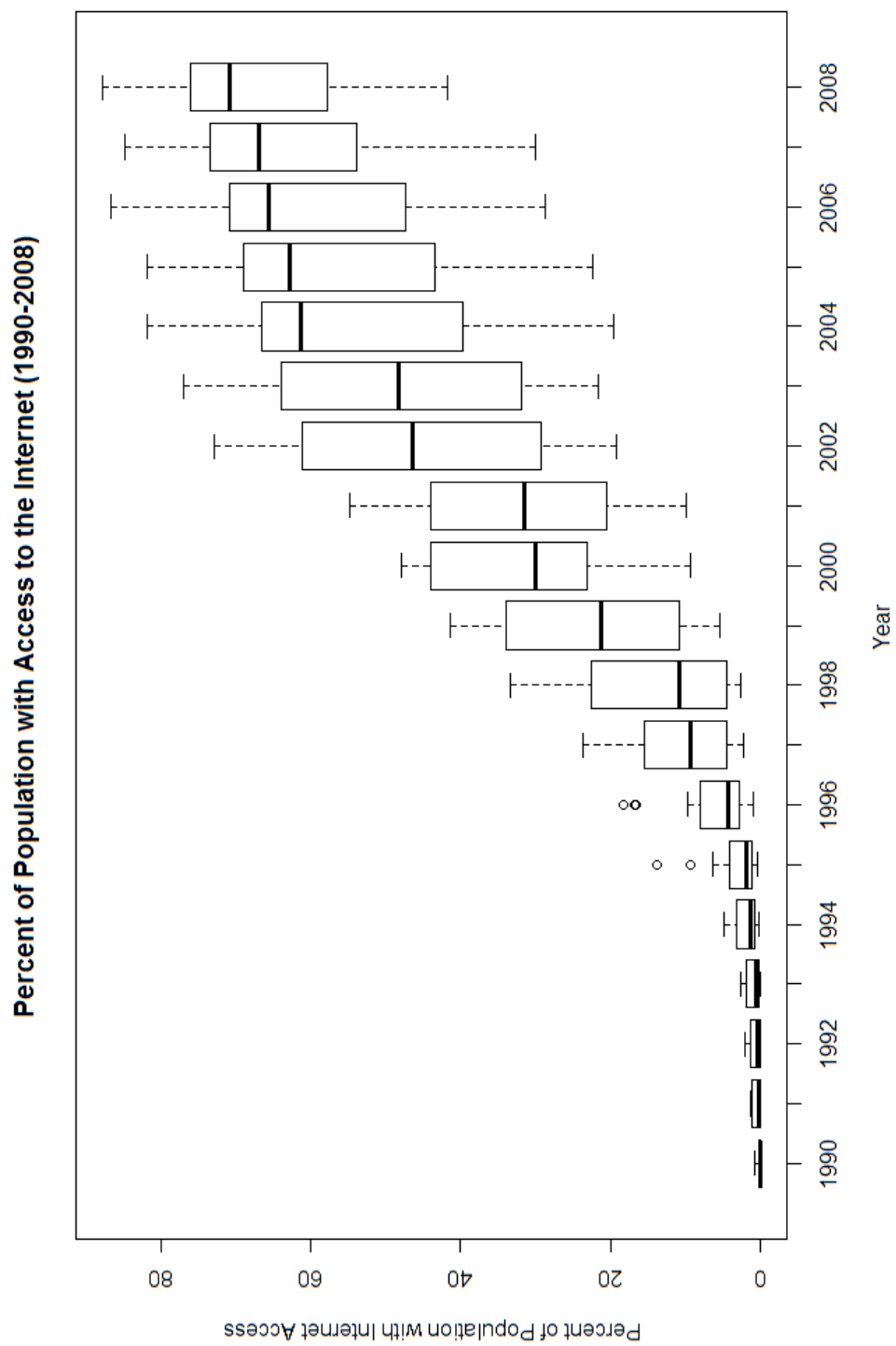
Figure 11: Percent of Population with Access to the Internet (1990-2008)

Figure 12: The Effect of One Standard Deviation Increase in Union Strength on Internet Access, Contingent on Globalization

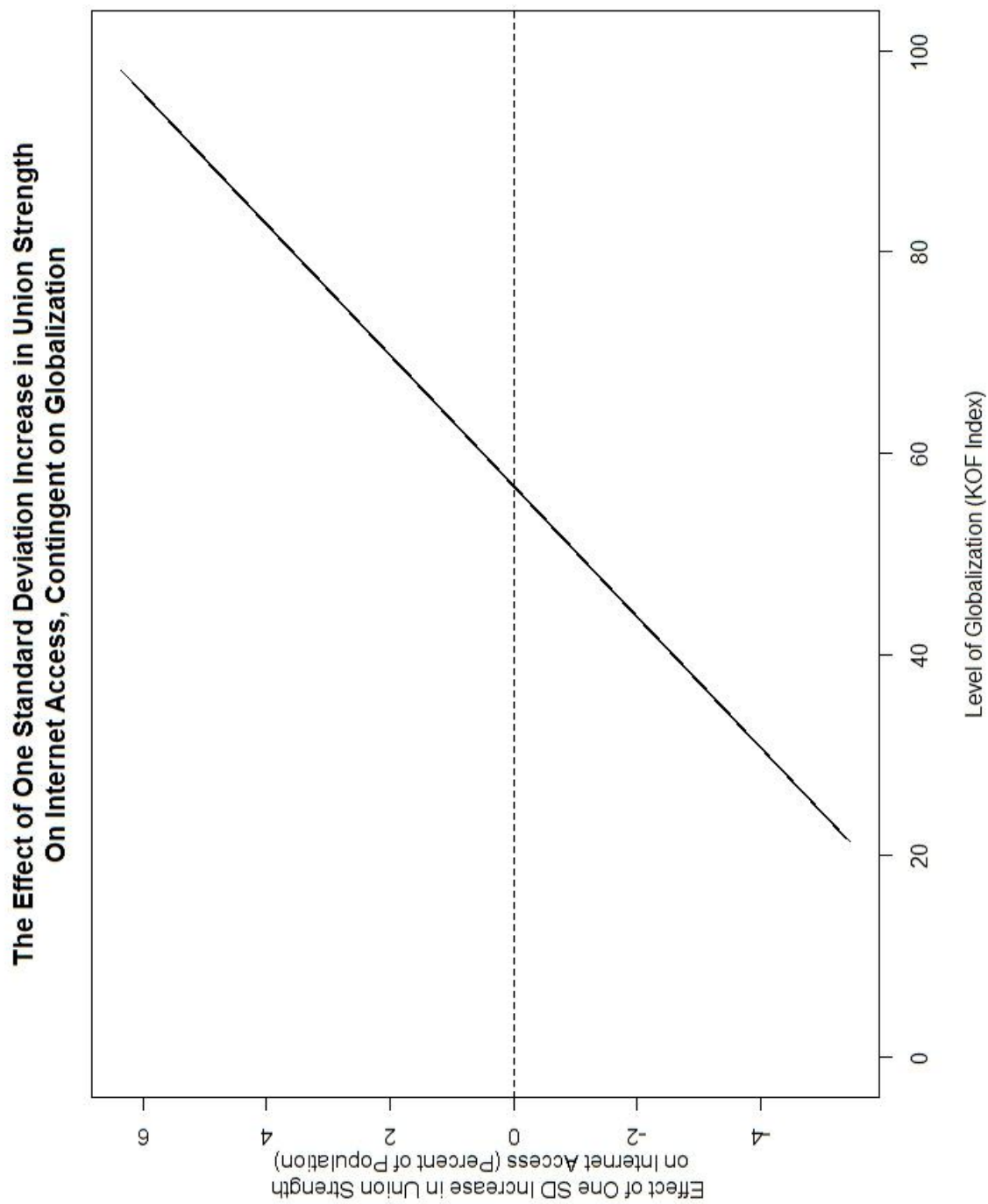


Figure 13: The Effect of One Standard Deviation Increase in Union Strength on Registered Carrier Departures Worldwide, Contingent on Globalization

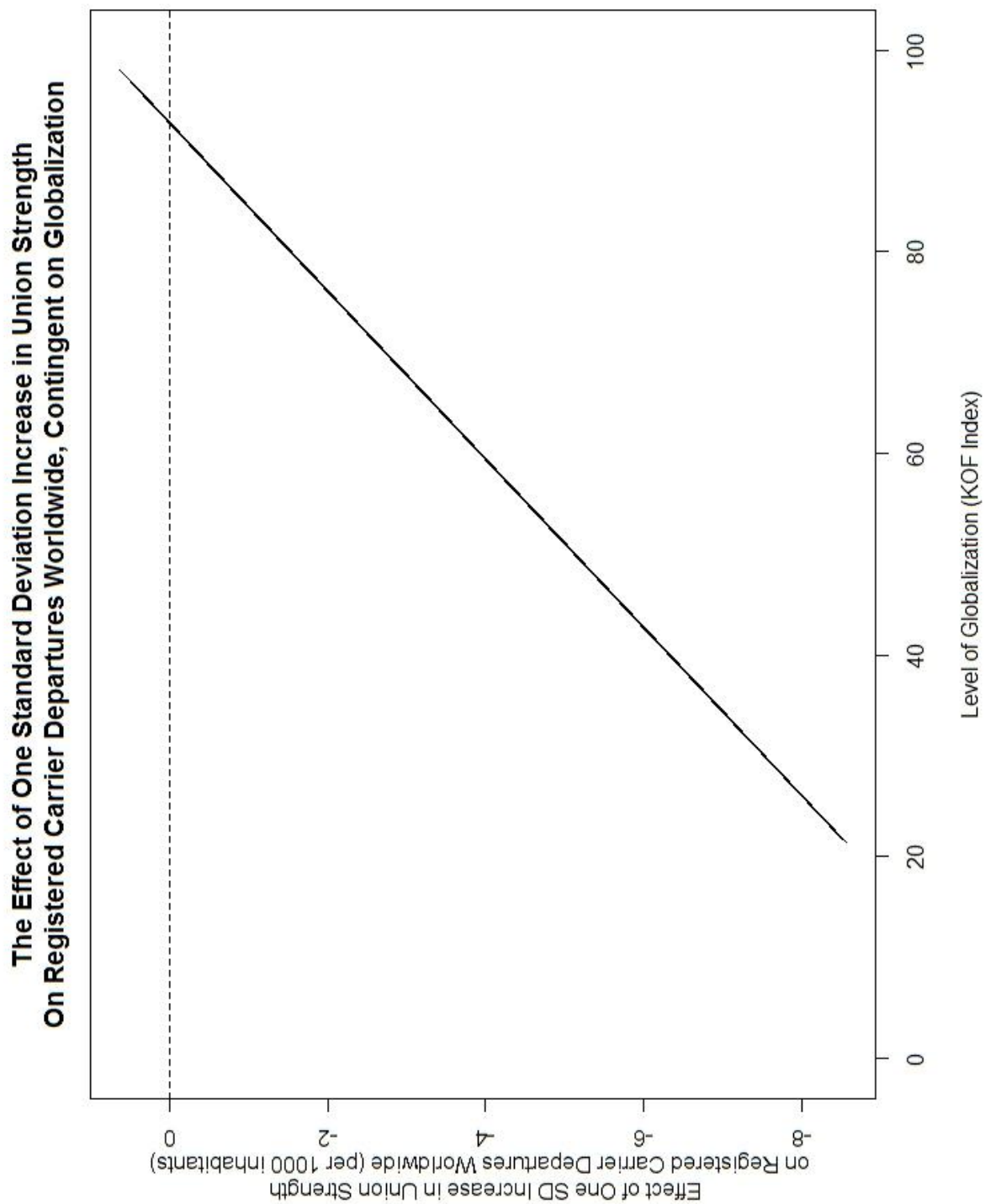


Figure 14: The Effect of One Standard Deviation Increase in Union Strength on Unemployment Benefits Expenditure by Level of Globalization Overlaying the Sample Distribution of Globalization Scores

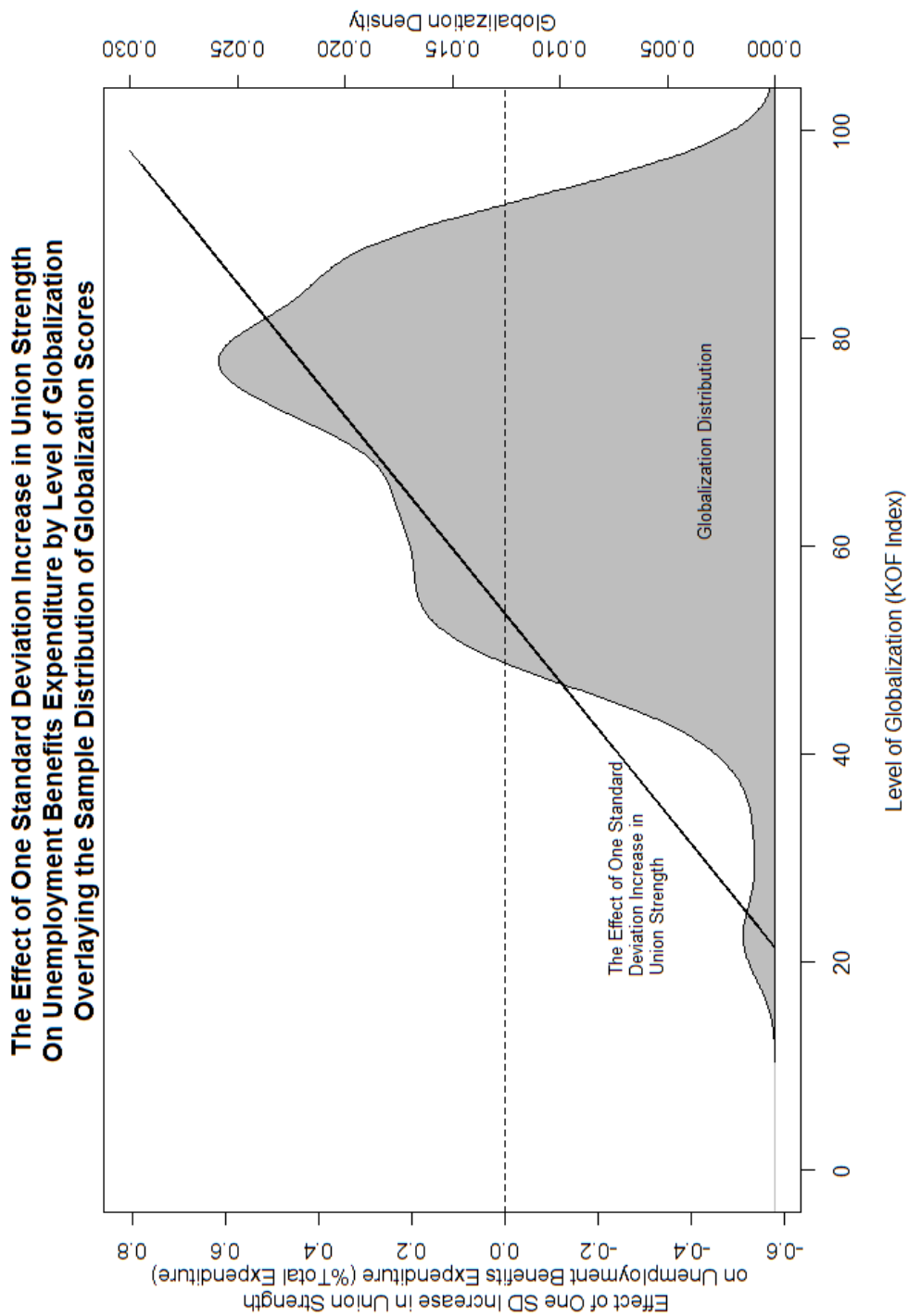


Figure 15: The Effect of Globalization on the Impact of Union Strength on Labor Market & Labor Market Policy Outcomes (Estimates of Interaction Terms with 95% Confidence Interval)

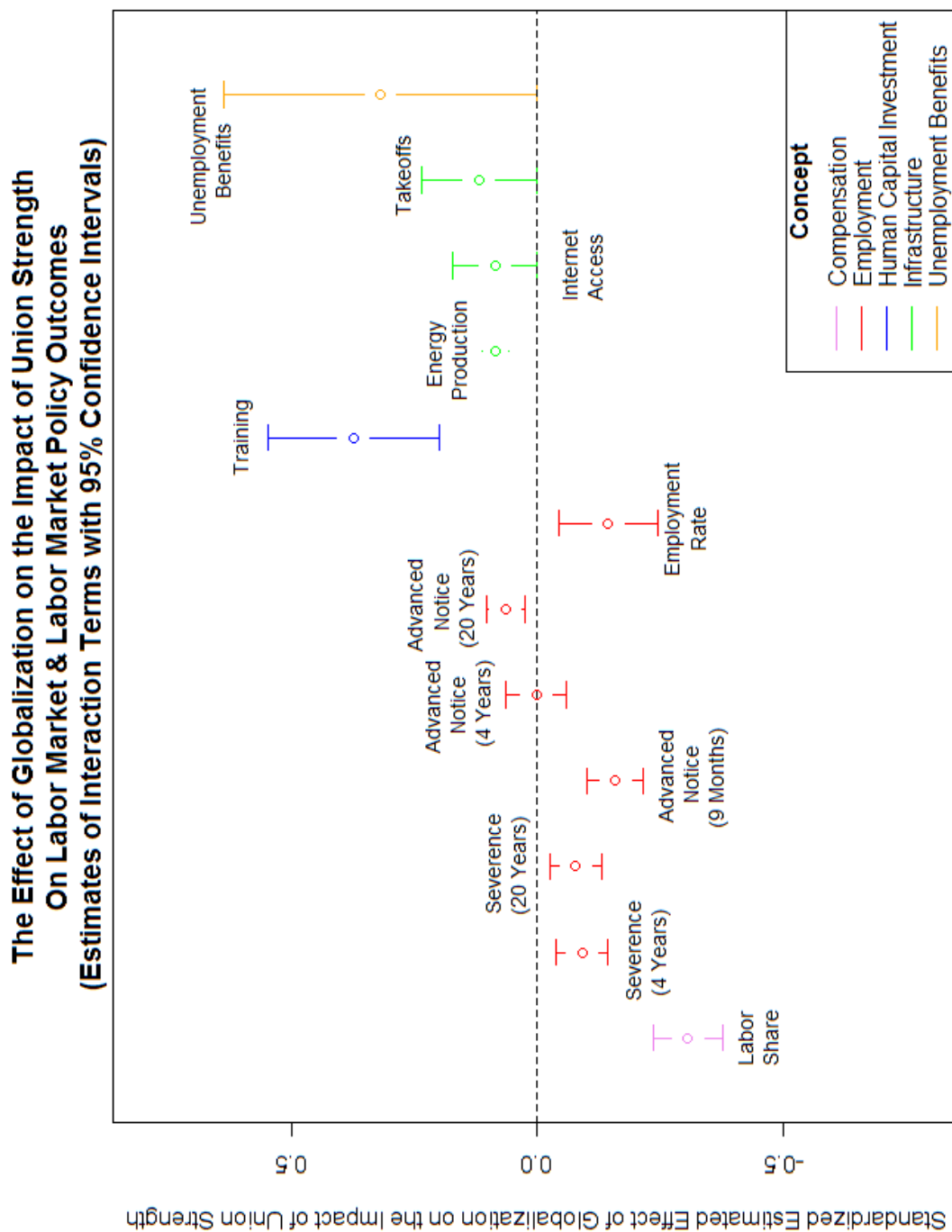


Figure 16: Globalization in the UK and in Rich Nations Overall (1970-2008)

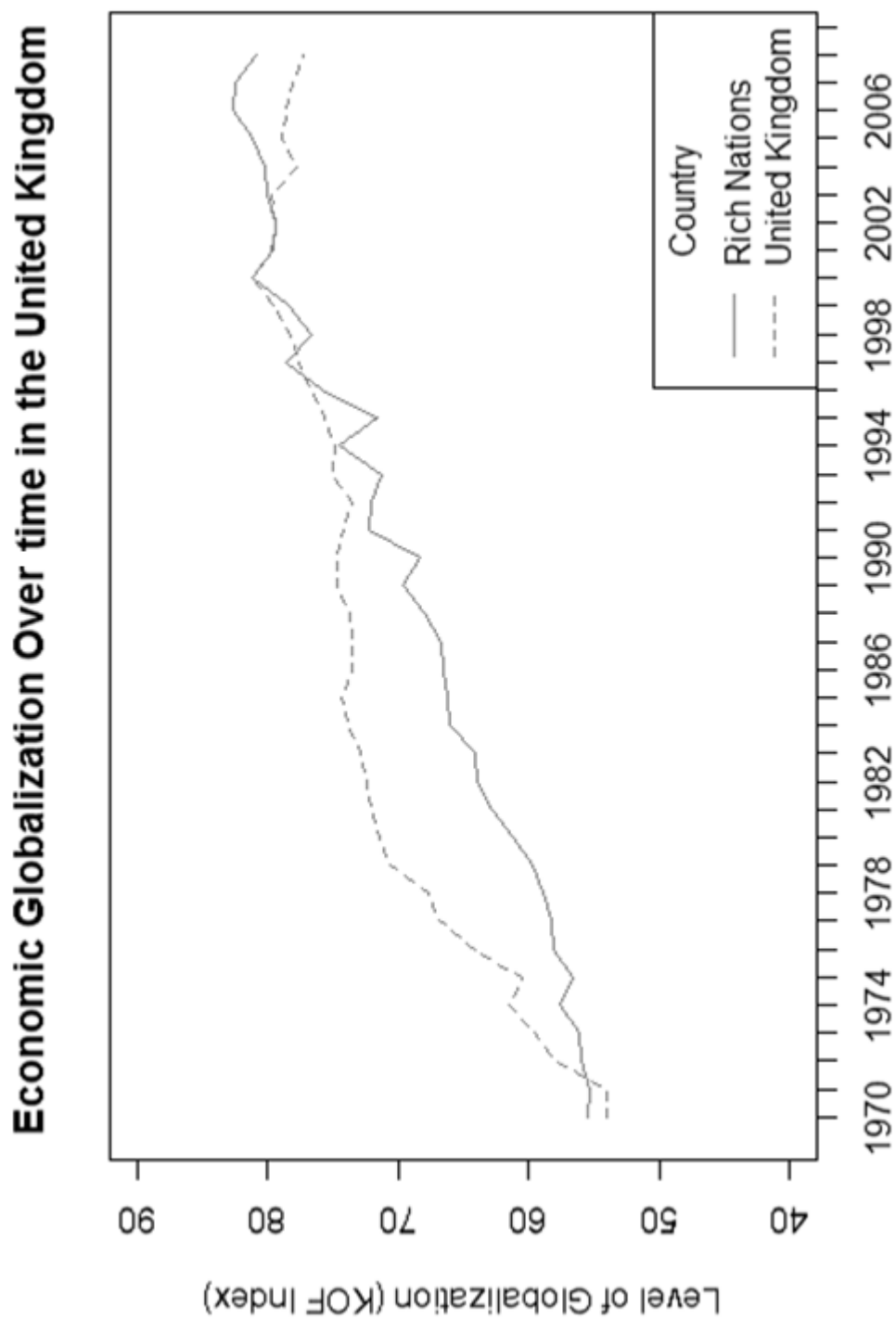


Figure 17: Change in Labor Input (Hours Worked Per Unit Output) by Sector (1990 – 2008)

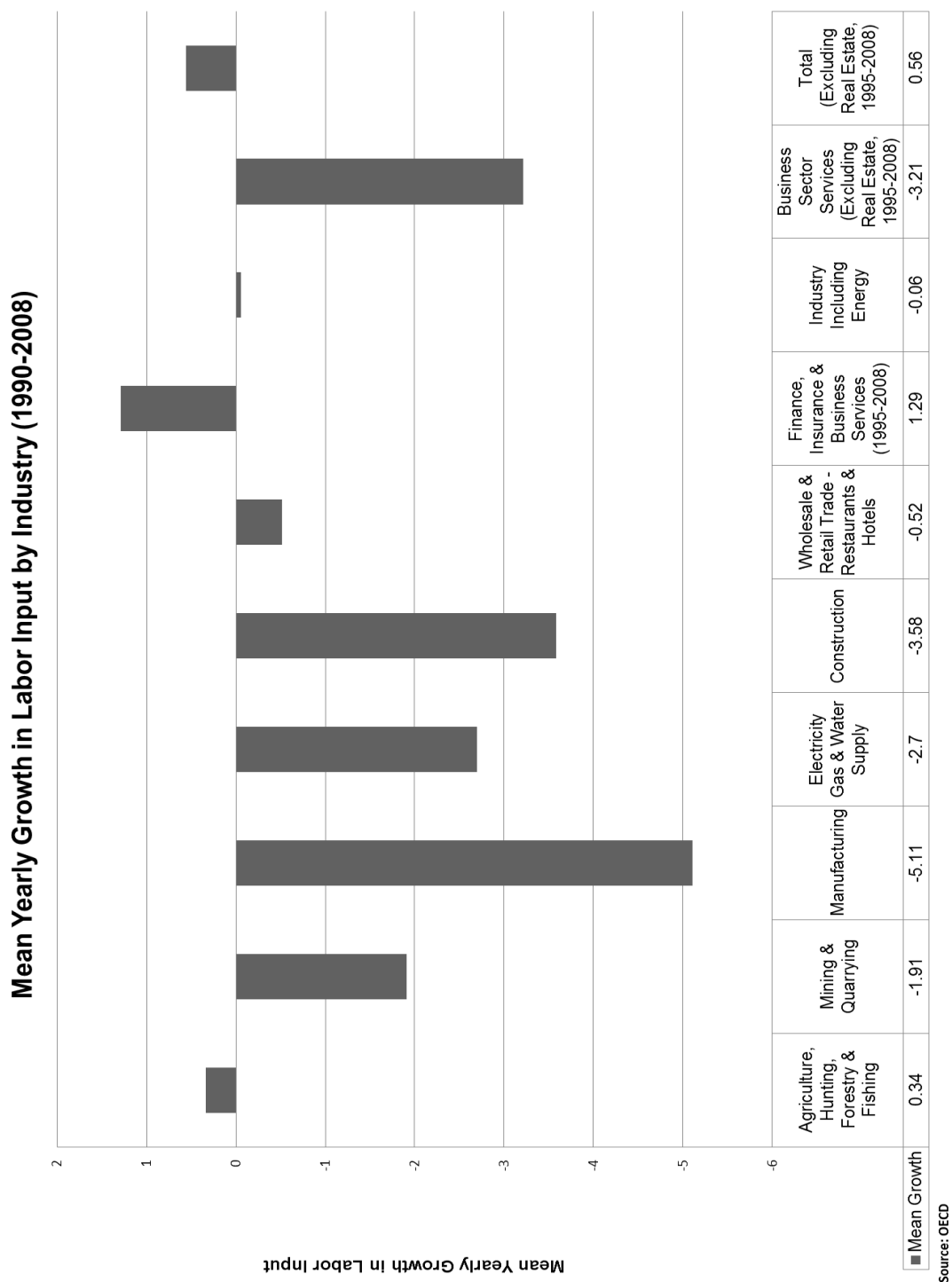
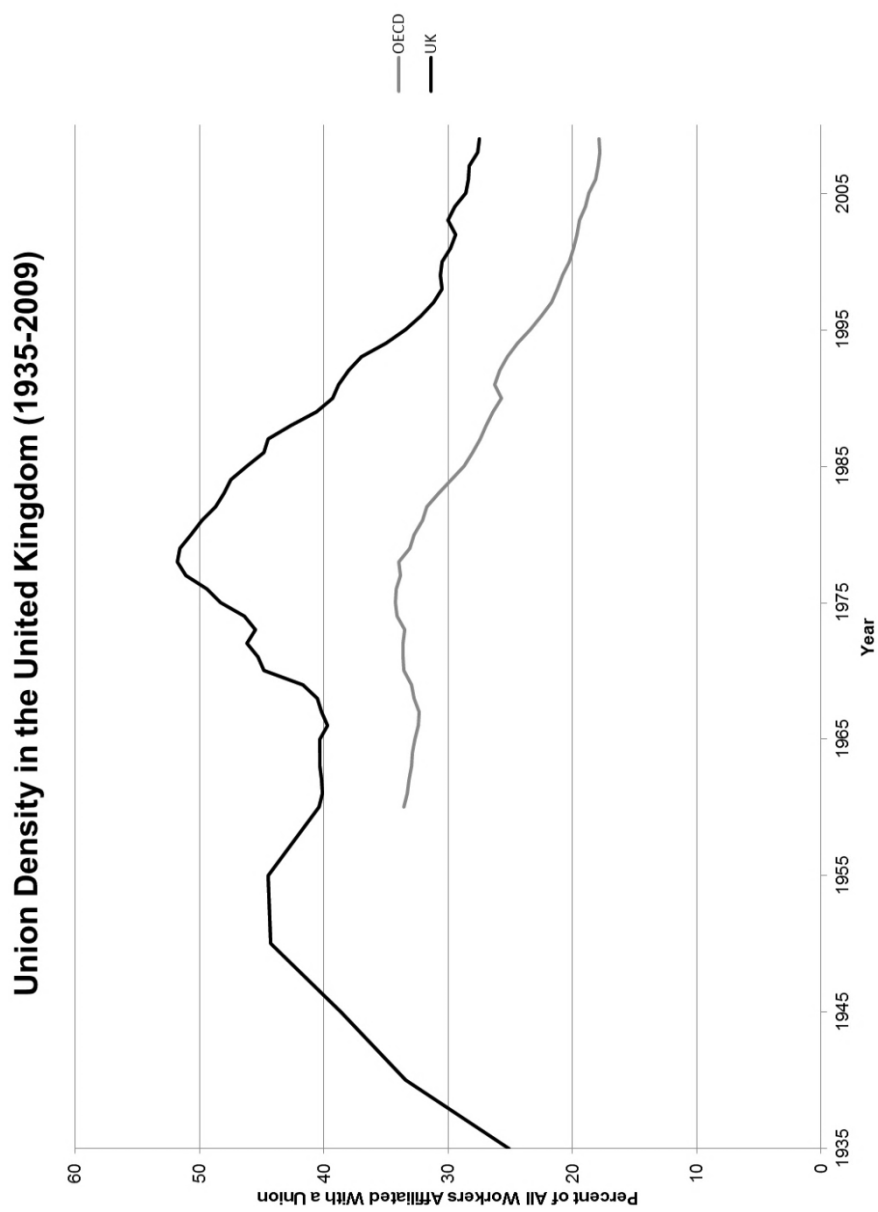
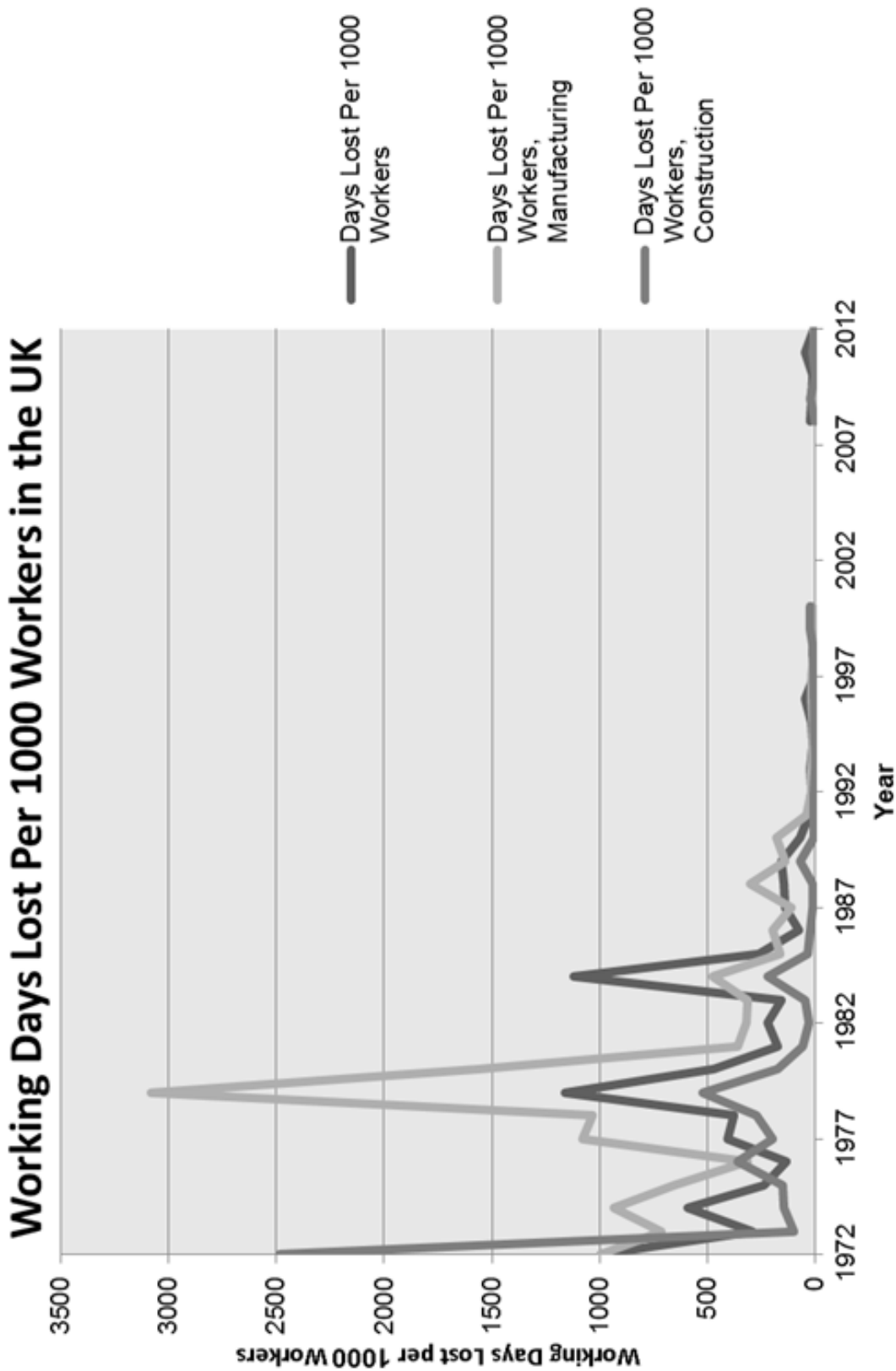


Figure 18: Union Density in the United Kingdom (1935-2009) and the OECD (1960-2009)



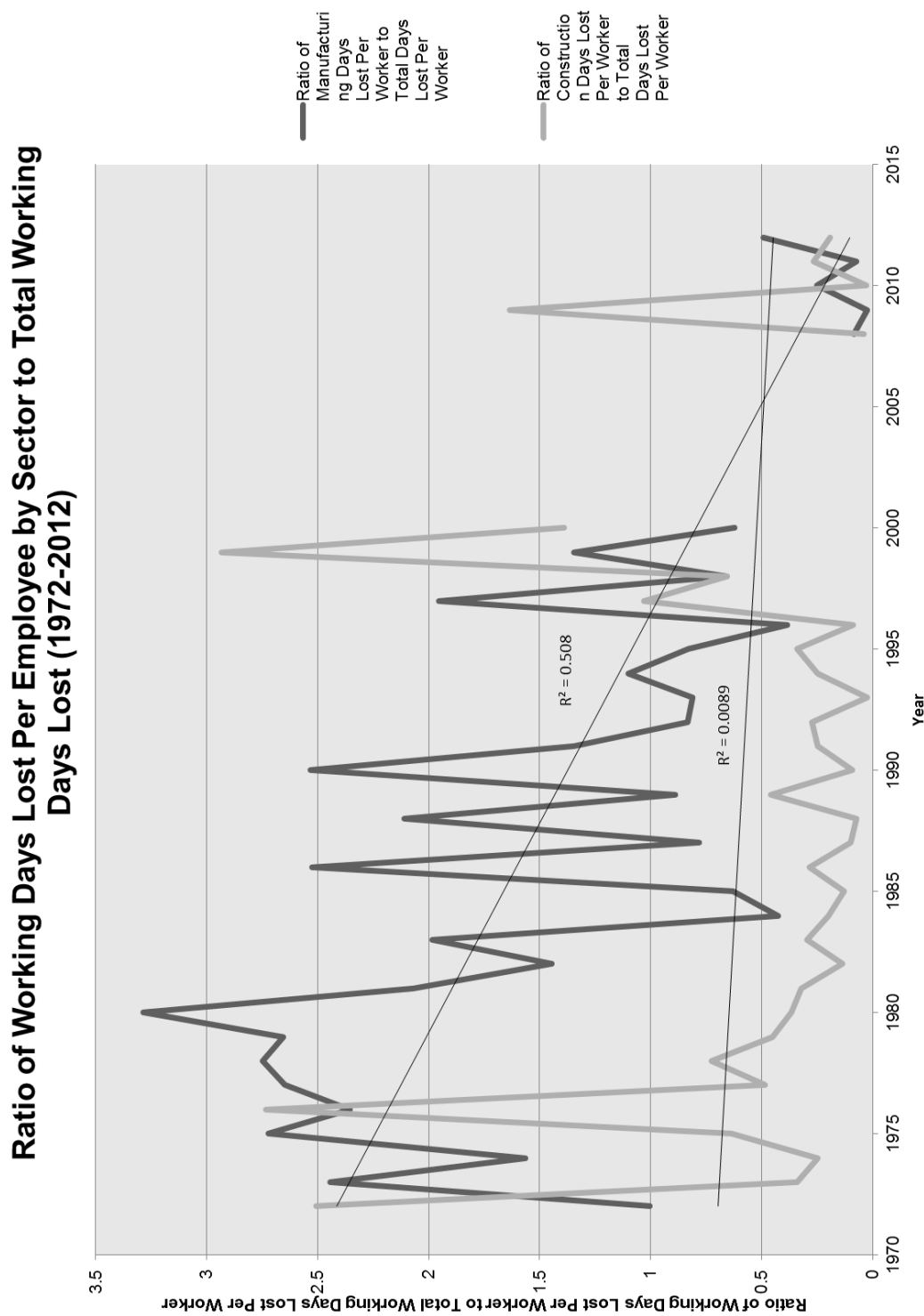
Source: For the UK, ICTWSS (2011) data was used for years 1960-2009 and Wrigley (2002) for the 1935-1960 period. OECD data was drawn from the OECD (2013).
 Note: Data before 1960 is 5 year averages

Figure 19: Days Lost Per 1000 Workers in the UK (1972-2012), Total and by Sector



Source: For 1972-2000, ILO (2013) and for 2008-2012 Office of National Statistics (2013)

Figure 20: Days Lost Per Workers in the UK by Sector as a Ratio to Total Days Lost Per Worker (1972-2012)



Source: For 1972 - 2000, ILO (2003) and for 2008-2012 Office of National Statistics (2013)

Figure 21: Labor Share by Sector in the UK (1972-2010)

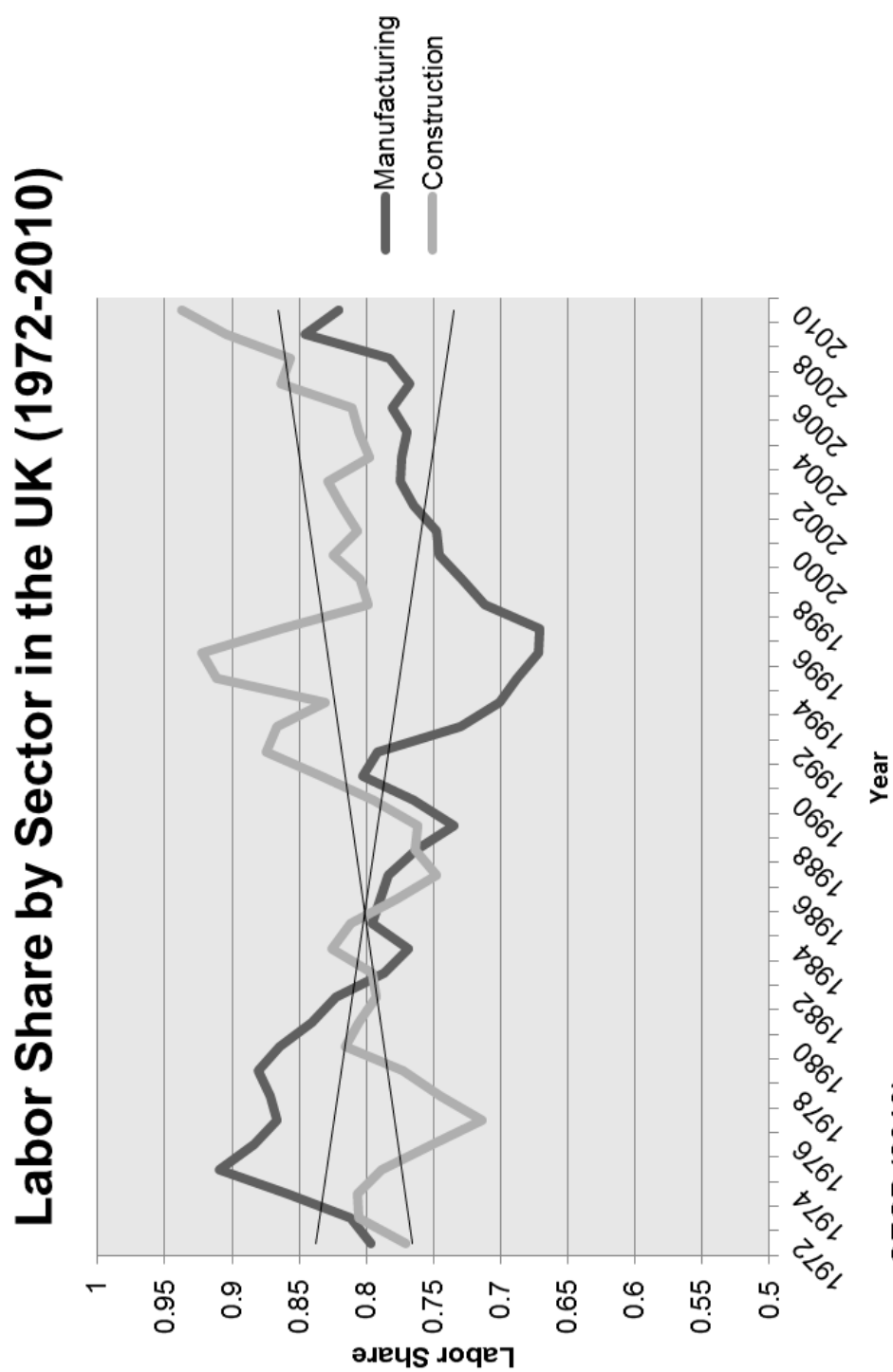
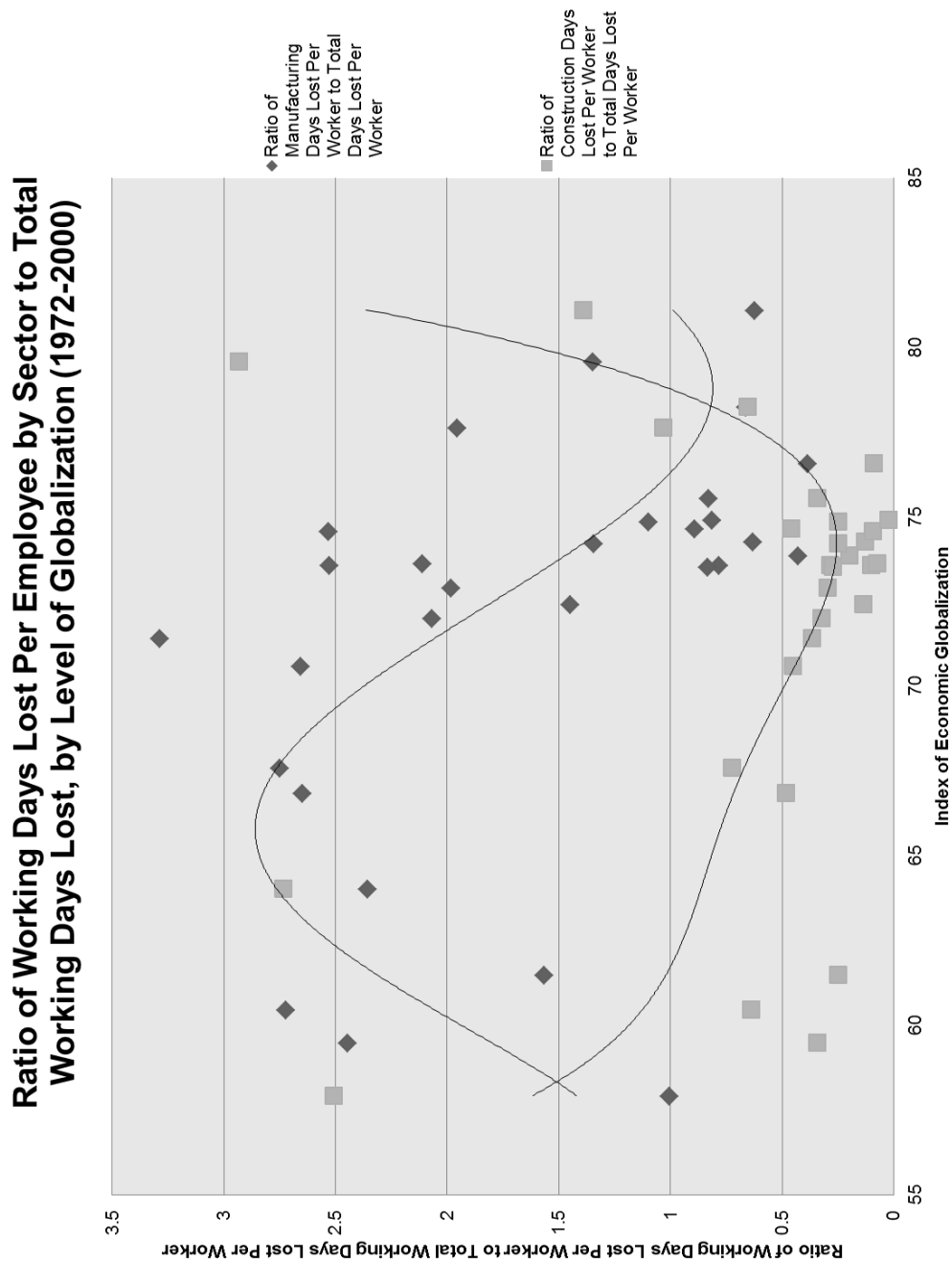
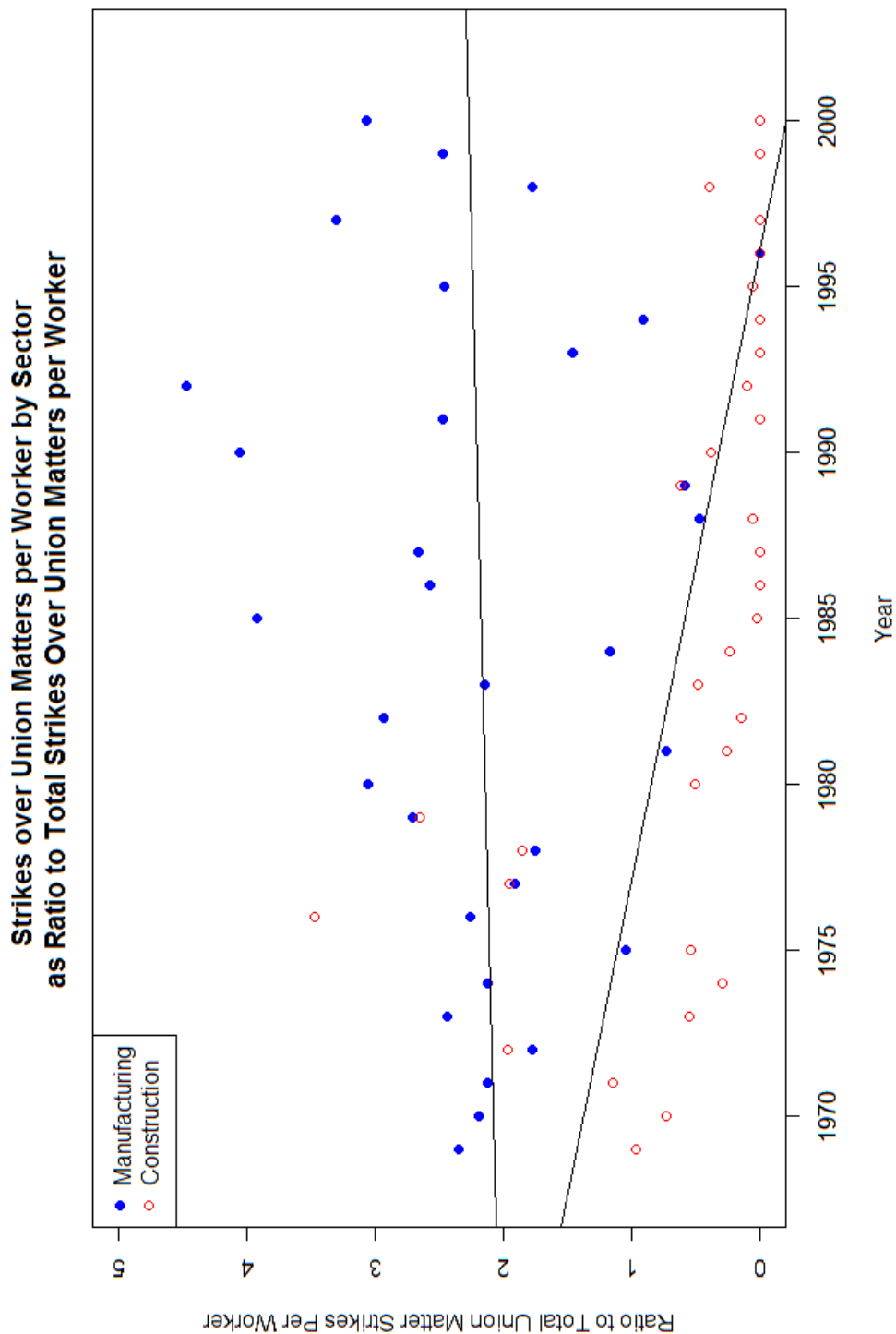


Figure 22: Days Lost Per Workers in the UK by Sector as a Ratio to Total Days Lost Per Worker, by Level of Globalization



Source: For Strike Data, ILO (2013) and for Globalization, KOF Index (2006)

Figure 23: Ratio of Strike over Union Matter in Construction and Manufacturing per Worker to Total Strikes over Union Matters per Worker



Source: Office of National Statistics (2013)

Figure 24: Number of Construction and Manufacturing Motions, Composites (Mover, Second, and Supporter) at Trades Union Congress (1997-2012) in Key Subjects as percent of Key Subjects (TUC 1997-2012)

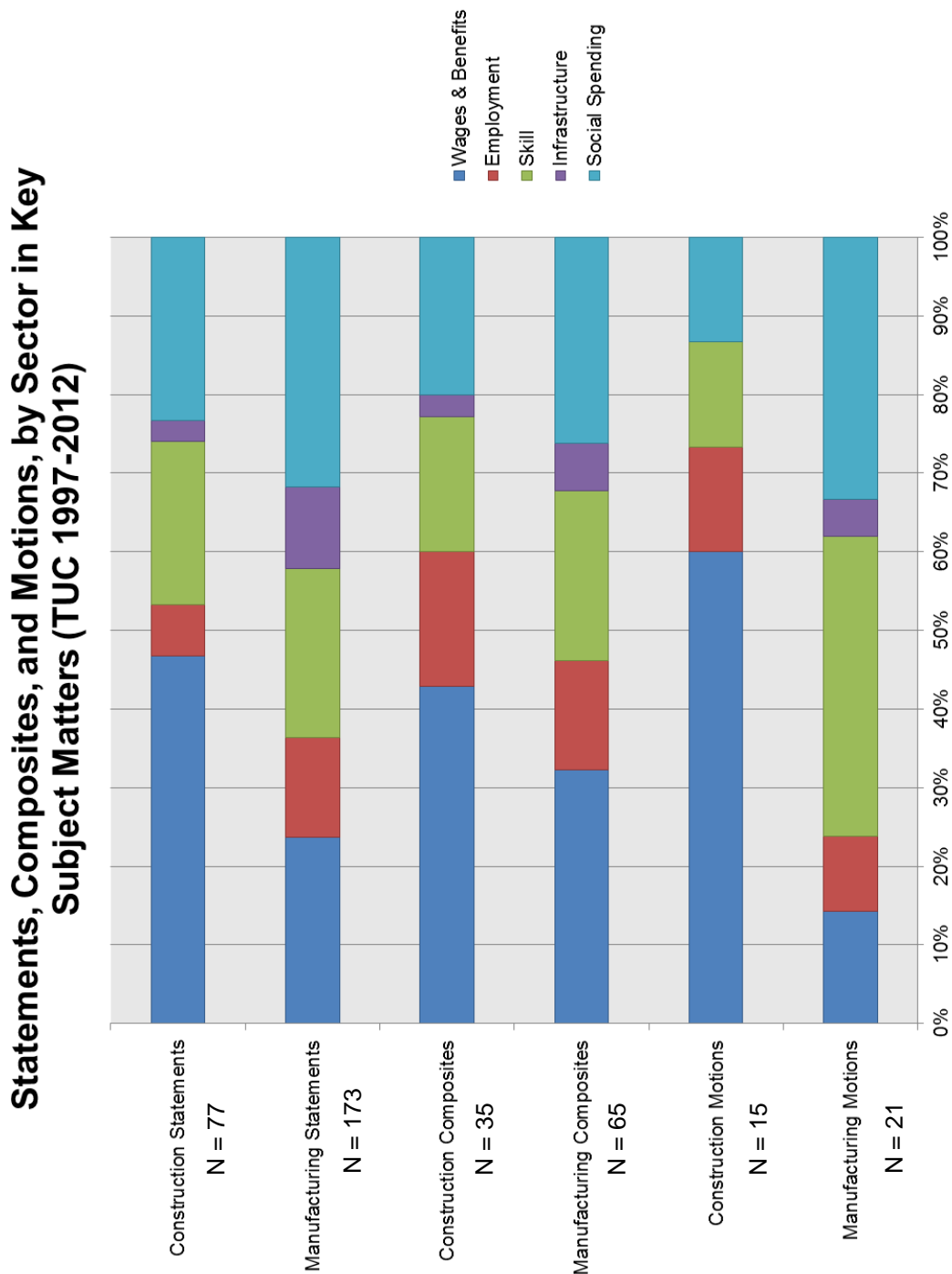
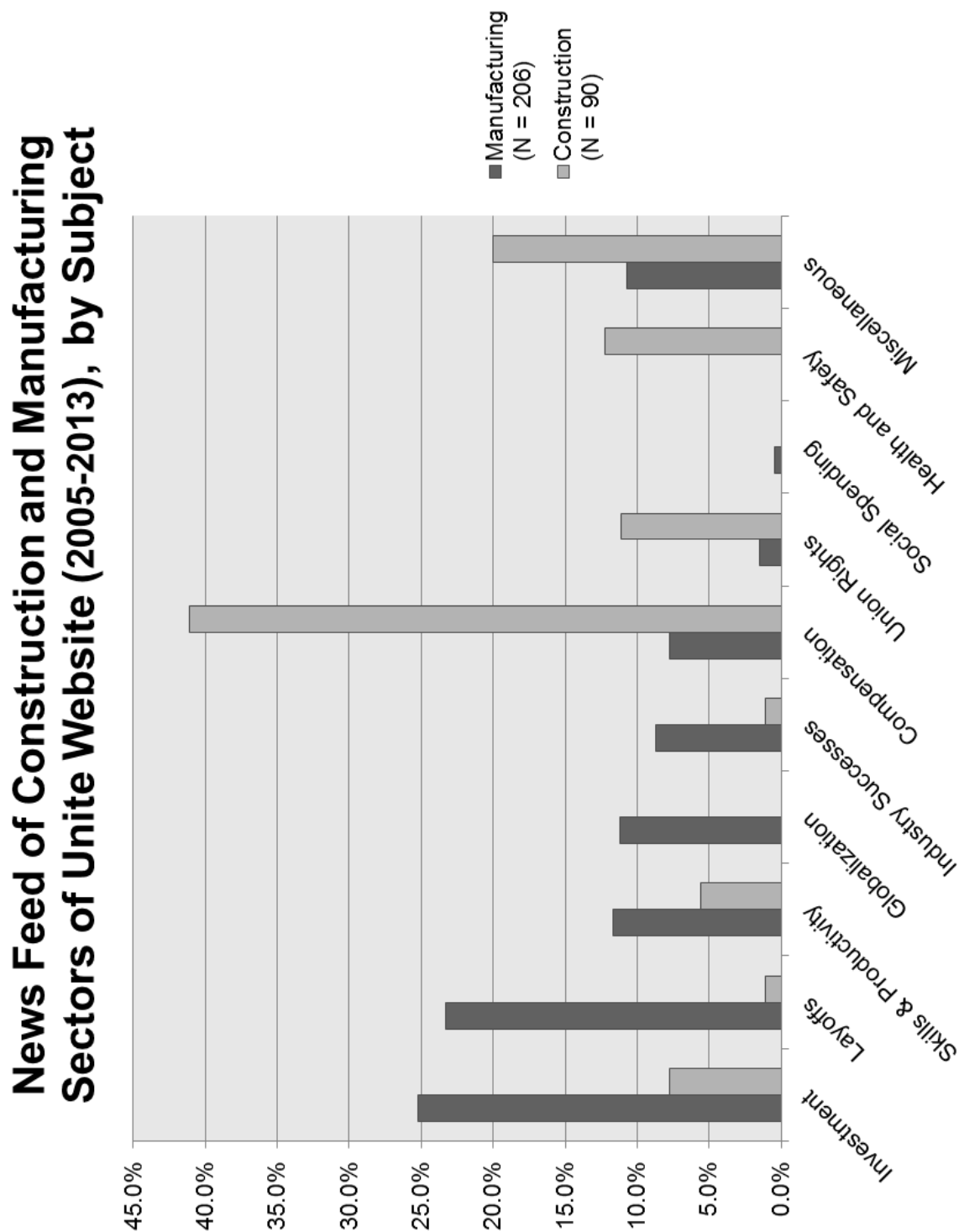


Figure 25: News Feed of Manufacturing and Construction Union Subsections of Unite Website by Subjects (2005-2013) (Updated, 3/17/13)



Data Sources

CANA

Castellacci, Fulvio, and Jose Miguel Natera. 2011. "A new panel dataset for cross-country analyses of national systems, growth and development (CANA)." *Innovation and Development* 1 (2): 205-226.

<<http://english.nupi.no/Publications/Working-Papers/2011/A-new-panel-dataset-for-cross-country-analyses-of-national-systems-growth-and-development-CANA>>

Database of Political Institutions

Beck, Thorsten, George Clarke, Alberto Groff, Philip Keefer, and Patrick Walsh, 2001. "New tools in comparative political economy: The Database of Political Institutions." *World Bank Economic Review* 15 (1): 165-176.

<<http://go.worldbank.org/2EAGGLRZ40>>

Office of National Statistics

Office of National Statistics. 2013. UK National Statistics (database). (March 16, 2013)

<<http://www.statistics.gov.uk/hub/index.html>>

Employment Department. 1978. "SN 1199 -Industrial Stoppages Data, 1966-1973."

<<http://www.esds.ac.uk/findingData/snDescription.asp?sn=1199>>

Employment Department. 1981. "SN 1775 -Industrial Stoppages Data, 1974-1980."

<<http://www.esds.ac.uk/findingData/snDescription.asp?sn=1775>>

Employment Department. 1984. "SN 2028 -Industrial Stoppages Data, 1981-1984."

<<http://www.esds.ac.uk/findingData/snDescription.asp?sn=2028>>

Employment Department. 1991. "SN 2788 -Industrial Stoppages Data, 1985-1989."

<<http://www.esds.ac.uk/findingData/snDescription.asp?sn=2788>>

Employment Department. 1984. "SN 2940 -Industrial Stoppages Data, 1990."

<<http://www.esds.ac.uk/findingData/snDescription.asp?sn=2940>>

Employment Department. 1994. "SN 2933 -Industrial Stoppages Data, 1991."

<<http://www.esds.ac.uk/findingData/snDescription.asp?sn=2933>>

Office of National Statistics. 1998. "SN 3798 -Labour Disputes in the UK, 1992."

<<http://www.esds.ac.uk/findingData/snDescription.asp?sn=3798>>

Office of National Statistics. 1998. "SN 3799 -Labour Disputes in the UK, 1993."

<<http://www.esds.ac.uk/findingData/snDescription.asp?sn=3799>>

Office of National Statistics. 1998. "SN 3800 -Labour Disputes in the UK, 1994."

<<http://www.esds.ac.uk/findingData/snDescription.asp?sn=3800>>

Office of National Statistics. 1998. "SN 3801 -Labour Disputes in the UK, 1995."

<<http://www.esds.ac.uk/findingData/snDescription.asp?sn=3801>>

Office of National Statistics. 1998. "SN 3802 -Labour Disputes in the UK, 1996."

<<http://www.esds.ac.uk/findingData/snDescription.asp?sn=3802>>

Office of National Statistics. 1998. "SN 3925 -Labour Disputes in the UK, 1997."

<<http://www.esds.ac.uk/findingData/snDescription.asp?sn=3925>>

Office of National Statistics. 2000. "SN 4040 -Labour Disputes in the UK, 1998."

< <http://www.esds.ac.uk/findingData/snDescription.asp?sn=4040>>

Office of National Statistics. 2001. "SN 4179 -Labour Disputes in the UK, 1999."

< <http://www.esds.ac.uk/findingData/snDescription.asp?sn=4179>>

Office of National Statistics. 2001. "SN 4405 -Labour Disputes in the UK, 2000."

< <http://www.esds.ac.uk/findingData/snDescription.asp?sn=4405>>

ICTWSS

Jelle Visser. 2011. "Data base on institutional characteristics of trade unions, wage setting, state intervention and social pacts, 1960-2010 (ICTWSS)." Amsterdam: Amsterdam Institute for Advanced Labour Studies.

<<http://www.uva-aias.net/208>>

IMF

Aleksynska, Mariya, and Martin Schindler. 2011. "Labor market regulations in low-, middle-and high-income countries: A new panel database." IMF Working Papers: 1-76.

<<http://www.imf.org/external/pubs/cat/longres.aspx?sk=25015.0>>

ILO

ILO. 2013. LABORSTA Internet (database). (March 12, 2013)

< [laborsta.ilo.org />](http://laborsta.ilo.org/)

KOF Index

Dreher, Axel. 2006. "Does globalization affect growth? Evidence from a new index of globalization." Applied Economics 38 (10):1091-1110.

<<http://globalization.kof.ethz.ch/>>

OECD

OECD. 2013. LABORSTA Internet (database). (February 10, 2013)

<<http://laborsta.ilo.org/>>

World Bank

World Bank. 2012. World Bank Development Indicators (database). (February 10, 2013).

<<http://data.worldbank.org/indicator>>

Works Cited

Abraham, Filip, Jozef Konings, and Stijn Vanormelingen. 2009. "The Effect of Globalization on Union Bargaining and Price-Cost Margins of Firms." *Review of World Economics* 145 (1): 13-36.

Acemoglu, Daron. 2003. "Labor- and Capital-Augmenting Technical Change," *Journal of the European Economic Association*, 1:37.

Acemoglu, Daron, and James A. Robinson. 2006. *Economic Origins of Dictatorship and Democracy*. New York: Cambridge University Press.

Ahlquist, John S. 2010. "Building Strategic Capacity: the political underpinnings of coordinated wage bargaining." *American Political Science Review* 104 (1): 171-88.

Aldcroft, Derek Howard, and Michael J. Oliver. 2000. *Trade unions and the economy, 1870-2000*. Ashgate.

Aleksynska, Mariya, and Martin Schindler. 2011. "Labor market regulations in low-, middle-and high-income countries: A new panel database." *IMF Working Papers*: 1-76.

Anderton, Bob, and Paul Brenton. 2002. "Outsourcing and low- skilled workers in the UK." *Bulletin of Economic Research* 51 (4): 267-286.

Babones, Salvatore J. 2008. "Income Inequality and Population Health: Correlation and Causality." *Social Science & Medicine*. 66 (7): 1614-1626.

Basu, Kaushik. 2006. "Globalization, Poverty, and Inequality: What Is the Relationship? What Can Be Done?" *World Development* 34 (8): 1361-1373

Beck, Thorsten, George Clarke, Alberto Groff, Philip Keefer, and Patrick Walsh, 2001. "New tools in comparative political economy: The Database of Political Institutions." *World Bank Economic Review* 15 (1): 165-176.

Beladi, Hamid, Chi-Chur Chao, and Daniel Hollas. 2011. "Does Globalization Weaken Labor Unions In Developing Countries?" *The Journal of International Trade & Economic Development: An International and Comparative Review*: 1-10.

Bergh, Andreas, and Therese Nilsson. 2010. "Do liberalization and globalization increase income inequality?." *European journal of political economy* 26 (4): 488-505.

Bogdanor, Vernon. 2012. *Britain in the 20th Century: the Collapse of the Postwar Settlement, 1964-1979*. [Transcript]. Gresham College. 13 March.

Boix, Carles. 2003. *Democracy and Redistribution*. New York: Cambridge University Press.

Boix, Carles. 2008. "Economic Roots of Civil Wars and Revolutions in the Contemporary World." *World Politics* 60 (April): 390-437.

- Boix, Carles. 2009. "The Conditional Relationship between Inequality and Development." *Political Science and Politics* 42 (4): 645-649.
- Boix, Carles. 2011. "Redistribution Policies in a Globalized World." In *Making Globalization Socially Sustainable*, Ed. Bacchetta, Marc, and Marion Jansen. World Trade Organization: 261
- Boulhol, Hervé. 2009. "Do capital market and trade liberalization trigger labor market deregulation?" *Journal of International Economics* 77 (2): 223-233.
- Brady, David. 2009. "Economic globalization and increasing earnings inequality in affluent democracies." *Research in the Sociology of Work* (18): 149-181.
- Burke, Tony. 2013. *Personal Interview*. March 18, 2013.
- Castellacci, Fulvio, and Jose Miguel Natera. 2011. "A new panel dataset for cross-country analyses of national systems, growth and development (CANA)." *Innovation and Development* 1 (2): 205-226.
- Calderón, César, and Alberto Chong. 2009. "Labor market institutions and income inequality: an empirical exploration." *Public Choice* 138 (1): 65-81.
- Chamberlain, Neil W. 1955. *A General Theory of Economic Process*. Harper.
- Coff, Russell. 1999. "When Competitive Advantage Doesn't Lead to Performance: The Resource-Based View and Stakeholder Bargaining Power." *Organization Science* 10: 119-133.
- Cornia, Giovanni Andrea, and Sampsa Kiiski. 2001. "Trends in Income Distribution in The Post-World War II Period: Evidence and Interpretation. No. 2001/89." *WIDER Discussion Papers/World Institute for Development Economics (UNU-WIDER)*.
- Dreher, Axel. 2006. "Does globalization affect growth? Evidence from a new index of globalization." *Applied Economics* 38 (10):1091-1110.
- Dreher, Axel, and Noel Gaston. 2007. "Has Globalisation Really Had No Effect On Unions?." *Kyklos* 60 (2007): 165-186.
- Dreher, Axel, and Noel Gaston. 2008. "Has Globalization Increased Inequality?." *Review of International Economics* 16 (3): 516-536.
- Dumont, Michel, Glenn Rayp, and Peter Willeme. 2006. "Does internationalization affect union bargaining power? An empirical study for five EU countries." *Oxford Economic Papers* 58 (1): 77-102.
- Echeverri-Gent, John. 2009. "New Approaches to the Politics of Inequality in Developing Countries." *PS, Political Science & Politics* 42 (October): 629-631.
- The Economist. 2012. "Labour Relations: Fight the Glower." *The Economist* (December 1).

- Egger, Hartmut. 2002. "Unemployment may be lower if unions bargain over wages and employment." *Labour* 16 (1): 103-133.
- Esping-Andersen, Gosta. 1990. *The Three Worlds of Welfare Capitalism*. Princeton, N.J.: Princeton University Press.
- European Commission. 2007 "Employment in Europe." Belgium: European Commission.
- Flanders, Allan. 1968. "Collective Bargaining: A Theoretical Analysis." *British Journal of Industrial Relations* 6 (1): 1-26.
- Fiorito, Jack, and Cheryl L. Maranto. 1987. "The contemporary decline of union strength." *Contemporary Economic Policy* 5 (4): 12-27.
- Friedman, Milton, and Rose Friedman. 1990. *Free to choose: A personal statement*. Mariner Books.
- Garrett, Geoffrey. 1998. *Partisan Politics in the Global Economy*. Cambridge: Cambridge University Press.
- Gaston, N. and D. Nelson. 2004. "Structural Change and The Labour Market Effects of Globalisation," *Review of International Economics*. 12: 769–792.
- Get Britain Building. 2013. "Get Britain Building – Home." <<http://www.getbritainbuilding.co.uk/>> (March 17, 2013)
- Golden, Miriam A., and Michael Wallerstein. 2011. "Domestic and international causes for the rise of pay inequality in OECD nations between 1980 and 2000." *Research in the Sociology of Work* (22): 209-249.
- Goldin, Claudia, and Lawrence F. Katz. 2007. *Long-run changes in the US wage structure: Narrowing, Widening, Polarizing*. No. w13568. National Bureau of Economic Research.
- Gourevitch, Peter Alexis, Andrew Martin, George Ross, Stephen Bornstein, Andrei Markovits, and Christopher Allen. 1984. *Unions and Economic Crisis: Britain, West Germany and Sweden*. London: Allen & Unwin,
- Greenaway, David, Robert C. Hine, and Peter Wright. 1999. "An empirical assessment of the impact of trade on employment in the United Kingdom." *European journal of political economy* 15 (3): 485-500.
- Guscina, Anastasia. 2007. "Effects of Globalization on Labor's Share in National Income." *IMF Working Papers*.
- Hacker, Jacob S., and Paul Pierson. 2011. *Winner-Take-All Politics: How Washington Made the Rich Richer--and Turned Its Back on the Middle Class*. Simon & Schuster.

Hall, Peter A., and David W. Soskice, eds. 2001. *Varieties of capitalism: The institutional foundations of comparative advantage*. Oxford: Oxford University Press.

Harrison, Ann. 2005. "Has Globalization Eroded Labor's Share? Some Cross-Country Evidence." *MPRA*.

Herzer, Dierk, and Sebastian Vollmer. 2011. "Inequality And Growth: Evidence From Panel Cointegration." *Journal of Economic Inequality*: 1-15.

Hessami, Zohal, and Thushyanthan Baskaran. 2013. *Has Globalization Affected Collective Bargaining? An Empirical Test, 1980-2009*. No. 2013-02. Department of Economics, University of Konstanz.

Hicks, Alexander. 1999. *Social Democracy and Welfare Capitalism*. Ithaca, N.Y.: Cornell University Press.

Hirsch, Barry T. 2008. "Sluggish Institutions in a Dynamic World: Can Unions and Industrial Competition Coexist?." *The Journal of Economic Perspectives* 22 (1): 153-176.

Hoxie, Robert. 1977 [1917]. *Trade Unionism in the United States*. Appleton-Century-Crofts.

ICTUR. 2005. *Trade Unions of the World, 6th Edition*. Farmington Hills, Michigan: John Harper Publishing.

International Trade Union Confederation. 2006. "World Bank Takes Major Step on Labor Standards." <<http://www.ituc-csi.org/world-bank-takes-major-step-on>>

IMF, 2007. "The globalization of labor." *Chapter 5 of World Economics Outlook April 2007*. Washington: IMF.

Irish Congress of Trade Unions. 2013. "Making Globalisation work for people." <<http://www.ictu.ie/globalsolidarity/workersrights/>>

Iversen, Torben. 1999. *Contested Economic Institutions. The politics of macroeconomics and wage bargaining in advanced democracies*. Cambridge, Mass., Cambridge

Iversen, Torben. 2001. "The Dynamics of Welfare State Expansion: Trade Openness, Deindustrialization, and Partisan Politics." *The New Politics of the Welfare State*.

Jones, R. S. and T. Yoon (2006), "Strengthening the Integration of Japan in the World Economy to Benefit more Fully from Globalisation", *OECD Economics Department Working Papers*, No. 526, OECD Publishing. <<http://dx.doi.org/10.1787/371585541612>>

Jönsson, Christer. 1981. "Bargaining power: notes on an elusive concept." *Cooperation and Conflict* 16 (4): 249-257.

Kaplinsky, Raphael. 2006. *Globalization, Poverty and Inequality: Between A Rock and A Hard Place*. Polity.

- Kenworthy, Lane. 2001. "Wage-Setting Institutions: A survey and assessment." *World Politics*, 54: 57-98.
- Kollmeyer, Christopher. 2009, "Explaining Deindustrialization: How Affluence, Productivity Growth, and Globalization Diminish Manufacturing Employment1." *American Journal of Sociology* 114 (6): 1644-1674.
- Korpi, Walter. 1983. *The Democratic Class Struggle*. London: Routledge and Kegan Paul.
- Kremer, Michael and Eric Maskin (2001), "Globalization and Inequality," *Mimeo* Harvard University.
- Krippner, Greta R. 2012. *Capitalizing on crisis: The political origins of the rise of finance*. Harvard University Press.
- Lee, Cheol-Sung. 2005. "International Migration, Deindustrialization and Union Decline In 16 Affluent OECD Countries, 1962–1997." *Social Forces* 84 (1): 71-88.
- Lindblom, Charles. 1948. "'Bargaining Power' In Price and Wage Determination." *The Quarterly Journal of Economics* 62 (May): 396-417.
- Luo, Changyuan and Jun Zhang. 2010. "Decline Labor Share: Is China's Case Different?" *China and World Economy*. 18(6): 1-18
- Magnani, Elisabetta, and David Prentice. 2003. "Did Globalization Reduce Unionization? Evidence from US Manufacturing." *Labour Economics* 10 (6): 705-726.
- Marchington, Mick, Jeremy Waddington, and Andrew Timing. 2004. "Employment Relations in Britain." In *International & Comparative Employment Relations: Globalisation and Developed Market Economies, 4th Edition*, eds. Greg Bamber, Russell Lansbury, and Nick Wailes. Thousand Oaks, CA: Sage Publishing.
- Marchington, Mick, Jeremy Waddington, and Andrew Timing. 2011. "Employment Relations in Britain." In *International & Comparative Employment Relations: Globalisation and Change, 5th Edition*, eds. Greg Bamber, Russell Lansbury, and Nick Wailes. Los Angeles, CA: Sage Publishing.
- Marx, Karl. 1847. *Marx & Engels Collected Works Volume 6*.
<<http://www.marxists.org/archive/marx/works/cw/index.htm>>
- McIlroy, John. 1995. *Trade unions in Britain today*. Manchester University Press.
- Meschi, Elena, and Marco Vivarelli. 2009. "Trade and Income Inequality in Developing Countries." *World Development* 37 (2): 287-302.
- Metcalf, David. 2009. "Union presence and labour productivity in British manufacturing industry. A reply to Nolan and Marginson." *British Journal of Industrial Relations* 28 (2): 249-266.

- Mishel, Lawrence. 1986. "The structural determinants of union bargaining power." *Industrial and Labor Relations Review*: 90-104.
- Noah, Timothy. 2012. *The Great Divergence: America's Growing Inequality Crisis and What We Can Do about It*, Bloomsbury Press.
- Olson, Mancur. 1982. *The rise and decline of nations: Economic growth, stagflation, and social rigidities*. Yale University Press.
- Oskarsson, Sven. 2003. "Institutional explanations of union strength: An assessment." *Politics & Society* 31 (4): 609-635.
- Pavcnik, Nina. 2011. "Globalization and Within-Country Income Inequality." In *Making Globalization Socially Sustainable*, Ed. Bacchetta, Marc, and Marion Jansen. World Trade Organization: 261
- Piazza, James A. 2005. "Globalizing quiescence: globalization, union density and strikes in 15 industrialized countries." *Economic and Industrial Democracy* 26 (2): 289-314.
- Polyani, Karl. 1957 [1945]. *The Great Transformation*. Boston: Beacon Press.
- Potrafke, Niklas. 2009. "Did globalization restrict partisan politics? An empirical evaluation of social expenditures in a panel of OECD countries." *Public Choice* 140 (1): 105-124.
- Potrafke, Niklas. 2010. "Labor Market Deregulation and Globalization: Empirical Evidence from OECD Countries." *Review of World Economics* 146 (3): 545-571.
- Ravallion, Martin. 1997. "Can High-Inequality Developing Countries Escape Absolute Poverty?." *Economics Letters* 56 (1): 51-57.
- Rodrik, Dani. 1997. *Has Globalization Gone Too Far?*. Peterson Institute.
- Ronconi, Lucas. 2012. "Globalization, Domestic Institutions, and Enforcement of Labor Law: Evidence from Latin America." *Industrial Relations: A Journal of Economy and Society* 51 (1): 89-105.
- Rousseau, Peter. 2008. "Biased and unbiased technological change." *The New Palgrave Dictionary of Economics, Second Edition*. Eds. Steven Durlauf and Lawrence Blume.
- Rudra, Nita. 2002. "Globalization and the Decline of the Welfare State In Less-Developed Countries." *International Organization* 56 (2): 411-445.
- Rueda, David. 2005. "Insider–outsider politics in industrialized democracies: the challenge to social democratic parties." *American Political Science Review* 99 (1): 61-74.
- Rueda, David, and Jonas Pontusson. 2000. "Wage Inequality and Varieties of Capitalism." *World Politics* 52 (3): 350-383.

- Schlozman, Kay, Benjamin Page, Sidney Verba, and Morris Fiorina. 2005. "Inequalities of Political Voice." In *Inequality and American democracy: What we know and what we need to learn*, eds. Lawrence Jacobs and Theda Skocpol. New York, NY: Russell Sage Foundation.
- Scruggs, Lyle, and James Allan. 2006. "Welfare-state decommodification in 18 OECD countries: a replication and revision." *Journal of European Social Policy* 16 (1): 55-72.
- Scruggs, Lyle, and Peter Lange. 2002. "Where have all the members gone? Globalization, institutions, and union density." *Journal of Politics* 64 (1): 126-153.
- Siebert, Horst. 1997. "Labor market rigidities: at the root of unemployment in Europe." *The Journal of Economic Perspectives* 11 (3): 37-54.
- Singh, Ajit, and Ann Zammit. 2004. "Labour standards and the 'race to the bottom': rethinking globalization and workers' rights from developmental and solidaristic perspectives." *Oxford Review of Economic Policy* 20 (1): 85-104.
- Smith, Adam. 2010 [1776]. *The Wealth of Nations*.
- Snower, Dennis J. 1995. *Evaluating Unemployment Policies: What Do the Underlying Theories Tell Us?*. Vol. 95. International Monetary Fund.
- Stockhammer, Engelbert. 2009. "Determinants of functional income distribution in OECD countries." *Macroeconomic Policy Institute Studies*.
- Swenson, Peter. 1991. "Bringing capital back in, or social democracy reconsidered: employer power, cross-class alliances, and centralization of industrial relations in Denmark and Sweden." *World Politics* 43 (4): 513-544.
- Tannenbaum, Frank. 1966 [1921]. *The Labour Movement: Its Conservative Functions and Social Consequences*. Putnams.
- Tarrow, Sidney G. 2011. *Power in movement: Social movements and contentious politics*. Cambridge University Press.
- Trades Union Congress (TUC). 1968. *Report 1968: The 100th Annual Trades Union Congress*. <<http://www.unionhistory.info/reports/Display.php?irn=6017566&QueryPage=.%2FAdvSearch.php>>
- Trades Union Congress (TUC). 1997. *Report 1997: The 129th Annual Trades Union Congress*. <http://www.tuc.org.uk/the_tuc/index.cfm?mins=63&minors=62&majorsubjectID=19>
- Trades Union Congress (TUC). 1998. *Report 1998: The 130th Annual Trades Union Congress*. <http://www.tuc.org.uk/the_tuc/index.cfm?mins=64&minors=62&majorsubjectID=19>
- Trades Union Congress (TUC). 1999. *Report 1999: The 131th Annual Trades Union Congress*. <http://www.tuc.org.uk/the_tuc/index.cfm?mins=65&minors=62&majorsubjectID=19>

Trades Union Congress (TUC). 2000. *Report 2000: The 132th Annual Trades Union Congress*. <http://www.tuc.org.uk/the_tuc/index.cfm?mins=66&minors=62&majorsubjectID=19>

Trades Union Congress (TUC). 2001. *Report 2001: The 133th Annual Trades Union Congress*. <http://www.tuc.org.uk/the_tuc/index.cfm?mins=67&minors=62&majorsubjectID=19>

Trades Union Congress (TUC). 2002. *Report 2002: The 134th Annual Trades Union Congress*. <http://www.tuc.org.uk/the_tuc/index.cfm?mins=68&minors=62&majorsubjectID=19>

Trades Union Congress (TUC). 2003. *Report 2003: The 135th Annual Trades Union Congress*. <http://www.tuc.org.uk/the_tuc/index.cfm?mins=69&minors=62&majorsubjectID=19>

Trades Union Congress (TUC). 2004. *Report 2004: The 136th Annual Trades Union Congress*. <http://www.tuc.org.uk/the_tuc/index.cfm?mins=70&minors=62&majorsubjectID=19>

Trades Union Congress (TUC). 2005. *Report 2005: The 137th Annual Trades Union Congress*. <http://www.tuc.org.uk/the_tuc/index.cfm?mins=71&minors=62&majorsubjectID=19>

Trades Union Congress (TUC). 2006. *Report 2006: The 138th Annual Trades Union Congress*. <http://www.tuc.org.uk/the_tuc/index.cfm?mins=72&minors=62&majorsubjectID=19>

Trades Union Congress (TUC). 2007. *Report 2007: The 139th Annual Trades Union Congress*. <http://www.tuc.org.uk/the_tuc/index.cfm?mins=73&minors=62&majorsubjectID=19>

Trades Union Congress (TUC). 2008. *Report 2008: The 140th Annual Trades Union Congress*. <http://www.tuc.org.uk/the_tuc/index.cfm?mins=74&minors=62&majorsubjectID=19>

Trades Union Congress (TUC). 2009. *Report 2009: The 141th Annual Trades Union Congress*. <http://www.tuc.org.uk/the_tuc/index.cfm?mins=75&minors=62&majorsubjectID=19>

Trades Union Congress (TUC). 2010. *Report 2010: The 142th Annual Trades Union Congress*. <http://www.tuc.org.uk/the_tuc/index.cfm?mins=363&minors=62&majorsubjectID=19>

Trades Union Congress (TUC). 2011a. *Report 2011: The 143th Annual Trades Union Congress*. <http://www.tuc.org.uk/the_tuc/index.cfm?mins=394&minors=62&majorsubjectID=19>

Trades Union Congress (TUC). 2011b. “German Lessons: Developing Industrial Policy for the UK.”

Trades Union Congress (TUC). 2012. *Report 2012: The 144th Annual Trades Union Congress*. <http://www.tuc.org.uk/the_tuc/index.cfm?mins=438&minors=62&majorsubjectID=19>

Trades Union Congress (TUC). 2013. *Trades Union Congress – TUC – Britain at Work*. <<http://www.tuc.org.uk/>> (March 10, 2013)

Tsai, Ming-Chang. 2007. “Does globalization affect human well-being?.” *Social Indicators Research* 81 (1): 103-126.

- Tsai, Pan-Long, Chao-Hsi Huang, and Chih-Yuan Yang. 2012. "Impact of Globalization on Income Distribution Inequality in 60 Countries: Comments." *Global Economy Journal* 12 (3)
- Unite. 2011. "Manufacturing UK: 2020 Vision. An update to Manufacturing: Into the Future."
- Unite. 2013a. "Welcome to Unite the Union – Britain and Ireland's Biggest Union." <<http://www.unitetheunion.org/>> (March 17, 2013)
- Unite. 2013b. "Welcome to Unite the Union – Britain's Biggest Union [Archive of Unite Website]." <<http://archive.unitetheunion.org/>> (March 17, 2013)
- Vijaya, Ramya and Linda Kaltani. 2007. "Foreign Direct Investment and Wages: A Bargaining Power Approach." *Journal of World-Systems Research* 8 (1): 83-95.
- Visser, Jelle. 2011. "Data base on institutional characteristics of trade unions, wage setting, state intervention and social pacts, 1960-2010 (ICTWSS)." *Amsterdam: Amsterdam Institute for Advanced Labour Studies*.
- Wagle, Udaya R. 2010. "Does Low Inequality Cause Low Poverty? Evidence From High-Income and Developing Countries," *Poverty & Public Policy* 2 (3): 30-52.
- Webb, Sidney and Beatrice Webb. 1902 [1897]. *Industrial Democracy*. London: Longmans, Green and Co.
- Webb, Sidney and Beatrice Webb. 1950 [1984]. *The History of Trade Unionism*. London: Longmans, Green and Co.
- World Bank. 2012. *World Bank Development Indicators* (database). (February 10, 2013).
- World Bank 2013. *Doing Business 2013: Smarter Regulations for Small and Medium-Size Enterprises*. International Bank for Reconstruction and Development / The World Bank.
- Wrigley, Chris. *British trade unions since 1933*. Vol. 46. Cambridge University Press, 2002.
- Zhou, Lei, Basudeb Biswas, Tyler Bowles, and Peter J. Saunders. 2011. "Impact of Globalization on Income Distribution Inequality in 60 Countries." *Global Economy Journal* 11 (1)

Appendix

Countries and Years for Which Both Union Strength and Globalization Data is Available

Country	Number of Observation	Years
Australia	17	1971, 1973, 1975, 1977, 1981, 1983, 1985, 1987, 1989, 1991, 1993, 1995, 1996, 2000, 2005, 2008
Austria	40	1970-2009
Belgium	40	1970-2009
Canada	40	1970-2009
Cyprus	8	1990, 1993, 1995, 1998, 2000, 2003, 2005, & 2006
Czech Republic	15	1995-2009
Denmark	39	1970-2008
Estonia	9	1993-2007
Finland	40	1970-2009
France	39	1970-2008
Germany	40	1970-2009
Greece	12	1980, 1985, 1990, 1992, 1995, 1998, 2001, 2004-2008
Hungary	7	1995, 1998, 2001, 2003, 2005, 2007, 2008
Ireland	40	1970-2009
Italy	40	1970-2009
Japan	39	1970-2008
Luxembourg	6	1993, 1997, 1998, 2003, 2006, 2008
Malta	5	1993, 1998, 2003, 2006, 2008
Netherlands	39	1970-2009
New Zealand	39	1970-2008
Norway	40	1970-2009
Poland	9	1990, 1993, 1998, 1999, 2001-2003, 2007, 2008
Portugal	11	1978, 1979, 1984, 1986, 1990, 1995, 1997, 2002, 2003, 2006, 2008
Slovakia	13	1993, 1995, 1998-2008
Slovenia	4	1995, 1998, 2003, 2008
Spain	31	1978-2008
Sweden	39	1970-2008
Switzerland	40	1970-2009
United Kingdom	40	1970-2009
United States	38	1970-2005, 2008, 2009

Descriptive Statistics for Explanatory & Control Variables

Concept	Min	Q1	Med.	Mean	Q3	Max	SD	N	Source
Union Strength (Union Density * Union Centralization, 0 = no unions, 100 = all workers in a single union)	1.6	6	13.4	17.4	25.6	61.3	13.3	819	ICTWSS
Globalization (0 = autarchy, 100 = completely open)	21.4	59	72.6	70.3	81.6	98.1	15.5	819	KOF
Wage Coordination (1 = Firm Level, 5 = Economy Wide)	1	2	4	3.2	4	5	1.4	819	ICTWSS
Ideology of Executive (0 = Right, 1 = Center, 2 = Left)	0	0	1	0.9	2	2	0.9	694	Database of Political Institutions
ICT (as percent of GDP)	0.7	1.7	2.3	2.4	3	7.1	0.9	608	CANA
Manufacturing (as percent of GDP)	8.9	16.3	19.6	19.8	23.1	35.8	4.9	745	OECD
Mining (as percent of GDP)	0.1	0.2	0.4	0.5	0.9	2.5	0.5	691	OECD
Agriculture (as percent of GDP)	0.5	3.3	5.1	6.7	8.6	27	4.9	745	OECD
Utilities (as percent of GDP)	0.3	0.6	0.8	0.9	1	2.8	0.4	740	OECD
Construction (as percent of GDP)	4.9	6.1	7.1	7.4	8.1	13.4	1.5	745	OECD
Hospitality (as percent of GDP)	13.4	17.3	19	19.6	21.7	27.7	3.2	744	OECD
Distribution (as percent of GDP)	3.6	5.8	6.2	6.4	6.7	10.5	1.1	744	OECD
Finance (as percent of GDP)	2.8	8.5	10.7	11.3	14.1	29.1	4.1	743	OECD
Service (as percent of GDP)	13.3	23.8	27.1	27.4	31.8	39.8	5.5	743	OECD
Mean Years of Schooling (of population above 14)	5.5	8.9	9.8	9.9	10.9	13	1.5	608	CANA
Energy Consumption (kWh per capita)	1776	5224	6603	8328	9073	27530	4988.3	608	CANA
Telephone Subscribers (per 1000)	86.4	415.2	606.6	798.6	1237	1911	465.1	608	CANA
Roads Paved (as percent of all roads)	20.1	65.4	89.9	81.3	98.9	100	20.9	608	CANA

Descriptive Statistics for Dependent Variables

Concept	Min	Q1	Med.	Mean	Q3	Max	SD	N	Source
Labor Share	45.9	64	68.3	67.8	71.8	98.5	7.8	795	OECD
Severance Pay after 9 Months of Service (months)	0	0	0	0.1	0	3	0.4	525	IMF
Severance Pay after 4 Years of Service (months)	0	0	0	0.6	1	4	0.9	525	IMF
Severance Pay after 20 Years of Service (months)	0	0	1	2.3	2.7	20	3.7	525	IMF
Advance Notice after 9 Months of Service (months)	0	0.3	1	0.9	1	2.5	0.6	525	IMF
Advance Notice after 4 Years of Service (months)	0	1	1.1	1.4	2	4	0.9	525	IMF
Advance Notice after 20 Years of Service (months)	0	2	2.5	3.4	5	10	2.5	525	IMF
Unemployment Rate (percent of labor force)	0.1	3.5	6.4	6.9	9.7	20.4	4.2	721	ILO
Training (percent of GDP)	0	0.1	0.2	0.2	0.3	1.1	0.2	513	OECD
Energy Consumption (kWh per capita)	1776	5224	6603	8328	9073	27530	4988.3	608	CANA
Internet users (percent of population)	0.0	2.2	22.4	28.8	51.6	87.7	27.4	419	CANA
Registered Carrier Departures Worldwide (per 1000 inhabitants)	0.3	6.1	13.2	17.0	21.2	82.2	15.6	608	CANA
Unemployment Benefits (percent of GDP)	0	0.5	1.1	1.2	1.6	4.8	0.9	513	OECD

Conditional Coefficient of Union Strength for All Dependent Variables as Derived from Full Model

Globalization (KOF Index)		Conditional Coefficient of Union Strength						
		Labor Share	Severance (4 Years)	Severance (20 Years)	Advance notice (9 Months)	Advance notice (4 Years)	Advance notice (20 Years)	Unemploy- ment Rate
<i>Min</i>	21.4	0.812	0.021	0.095	0.008	-0.035	-0.059	-0.278
<i>First Quartile</i>	59.0	0.376	0.006	0.041	-0.010	-0.035	-0.029	-0.167
<i>Median</i>	72.6	0.218	0.000	0.022	-0.016	-0.035	-0.019	-0.126
<i>Third Quartile</i>	81.6	0.113	-0.003	0.009	-0.020	-0.035	-0.012	-0.100
<i>Max</i>	98.1	-0.078	-0.010	-0.014	-0.028	-0.035	0.001	-0.051
<i>P-Value of Interaction</i>		P < 0.001	P < 0.001	P = 0.004	P < 0.001	P = 0.95	P = 0.0011	P = 0.0055

Globalization (KOF Index)		Conditional Coefficient of Union Strength				
		Training	Energy Production	Internet Access	Takeoffs	Unemployment Benefits
<i>Min</i>	21.4	-0.014	-57.130	-0.408	-0.644	-0.043
<i>First Quartile</i>	59.0	-0.001	19.950	0.028	-0.305	0.008
<i>Median</i>	72.6	0.004	47.830	0.186	-0.182	0.026
<i>Third Quartile</i>	81.6	0.007	66.280	0.291	-0.101	0.038
<i>Max</i>	98.1	0.013	100.105	0.482	0.048	0.061
<i>P-Value of Interaction</i>		P < 0.001	P < 0.001	P = 0.11	P = 0.005	P = 0.010

Conditional Effect of One Standard Deviation Increase in Union Strength as Derived from Full Model

The Conditional Coefficient Multiplied by the Standard Deviation of Union Strength

Conditional Effect of One Standard Deviation Increase in Union Strength								
Globalization (KOF Index)		Labor Share	Severance (4 Years)	Severance (20 Years)	Advance notice (9 Months)	Advance notice (4 Years)	Advance notice (20 Years)	Unemployment Rate
<i>Min</i>	21.4	10.79	0.28	1.26	0.11	-0.47	-0.78	-3.69
<i>First Quartile</i>	59.0	5.00	0.08	0.54	-0.13	-0.47	-0.39	-2.22
<i>Median</i>	72.6	2.90	0.00	0.29	-0.21	-0.47	-0.25	-1.67
<i>Third Quartile</i>	81.6	1.50	-0.04	0.12	-0.27	-0.47	-0.16	-1.33
<i>Max</i>	98.1	-1.04	-0.13	-0.19	-0.37	-0.47	0.01	-0.68
<i>P-Value of Interaction</i>		P < 0.001	P < 0.001	P = 0.004	P < 0.001	P = 0.95	P = 0.0011	P = 0.0055

Conditional Effect of One Standard Deviation Increase in Union Strength						
Globalization (KOF Index)		Training	Energy Production	Internet Access	Takeoffs	Unemployment Benefits
<i>Min</i>	21.4	-0.19	-759.09	-5.42	-8.56	-0.57
<i>First Quartile</i>	59.0	-0.01	265.08	0.37	-4.05	0.11
<i>Median</i>	72.6	0.05	635.52	2.47	-2.42	0.35
<i>Third Quartile</i>	81.6	0.09	880.67	3.87	-1.34	0.50
<i>Max</i>	98.1	0.17	1330.10	6.40	0.64	0.81
<i>P-Value of Interaction</i>		P < 0.001	P < 0.001	P = 0.11	P = 0.005	P = 0.010

Conditional Effect of One Standard Deviation Increase in Union Strength as Derived from Full Model

The Conditional Coefficient Multiplied by the Standard Deviation of Union Strength and Divided by the Standard Deviation of the Dependent Variable

Standardized Conditional Effect of One Standard Deviation Increase in Union Strength								
Globalization (KOF Index)		Labor Share	Severance (4 Years)	Severance (20 Years)	Advance notice (9 Months)	Advance notice (4 Years)	Advance notice (20 Years)	Unemploy- ment Rate
<i>Min</i>	21.4	1.38	0.31	0.34	0.18	-0.52	-0.31	-0.88
<i>First Quartile</i>	59.0	0.64	0.09	0.15	-0.22	-0.52	-0.16	-0.53
<i>Median</i>	72.6	0.37	0.00	0.08	-0.35	-0.52	-0.10	-0.40
<i>Third Quartile</i>	81.6	0.19	-0.04	0.03	-0.45	-0.52	-0.06	-0.32
<i>Max</i>	98.1	-0.13	-0.14	-0.05	-0.62	-0.52	0.00	-0.16
<i>P-Value of Interaction</i>		P < 0.001	P < 0.001	P = 0.004	P < 0.001	P = 0.95	P = 0.0011	P = 0.0055

Standardized Conditional Effect of One Standard Deviation Increase in Union Strength						
Globalization (KOF Index)		Training	Energy Production	Internet Access	Takeoffs	Unemployment Benefits
<i>Min</i>	21.4	-0.95	-0.15	-0.20	-0.55	-0.63
<i>First Quartile</i>	59.0	-0.05	0.05	0.01	-0.26	0.12
<i>Median</i>	72.6	0.25	0.13	0.09	-0.16	0.39
<i>Third Quartile</i>	81.6	0.45	0.18	0.14	-0.09	0.56
<i>Max</i>	98.1	0.85	0.27	0.23	0.04	0.90
<i>P-Value of Interaction</i>		P < 0.001	P < 0.001	P = 0.11	P = 0.005	P = 0.010

Trade Union Membership of Trades Union Congress

Total Members of Affiliated Organization: 6 Million

Affiliated Unions	Industries	Members
Accord	Lloyds Banking Group, Equitable Life Assurance Society	27,995
Advance	All staff employed in Santander and Santander businesses in the UK	7,482
Aegis the Union	Staff at Aegon UK – part of the international finance group that provides pensions, life insurance and investment products	1,727
Associated Society of Locomotive Engineers and Firemen	Railways – drivers, operational supervisors and staff	18,898
Association of Educational Psychologists	Educational psychologists in local educational authorities and other public and private organisations in England, Wales and Northern Ireland.	3,341
Association of Flight Attendants	Airline cabin crew	500
Association of Teachers and Lecturers	Teachers, headteachers, lecturers and teaching support staff in nursery, primary, secondary schools, sixth form and further education colleges	132,109
Bakers, Food and Allied Workers Union	Food	20,816
Britannia Staff Union	Finance sector union representing staff working in Co-operative Banking Group and its group of companies	3,149
British Airline Pilots' Association	Airline pilots, winchmen and flight engineers (commercial)	8,400
British Association of Colliery Management – Technical, Energy and Administrative Management	Mining	2,218
British Dietetic Association	The science and practice of dietetics in the public and private sector	6,722
British Orthoptic Society Trade Union	Orthoptists	975
Broadcasting, Entertainment, Cinematograph and Theatre Union	Broadcasting, film, digital and online media, theatre, cinema and related sectors	24,326
Chartered Society of Physiotherapy	The Chartered Society of Physiotherapy is the professional, educational and trade union body for chartered physiotherapists, physiotherapy students and assistants	37,601
Communication Workers Union	Royal Mail Group, Post office, BT, O2 and other telecoms companies, Cable TV, Accenture HR Services, Capita, Santander and other related industries	204,419
Community	Steel and metal, textiles, footwear and leather, betting shops, social care	50,012
Educational Institute of Scotland	Teachers, lecturers, associated educational personnel (Scotland)	56,138

Equity	Performance workers in theatre, film television, radio and variety, fashion models	36,785
FDA	Civil service, public bodies and NHS	18,269
Fire Brigades Union	Local authority fire brigades	42,605
GMB	Public services – local government, school support staff, care, NHS and education; also security, civil air transport, food production, distribution, retail, energy, utilities, catering, construction, shipbuilding, aerospace, defence, engineering, chemicals, leisure, textiles and clothing	610,116
Hospital Consultants and Specialists Association	Hospital consultants, associate specialists, SpR grade and staff grade	3,432
Musicians' Union	Employed and self-employed musicians including live and recording artists, writers, composers and teachers	31,482
National Association of Colliery Overmen, Deputies and Shotfirers	Mining	323
National Association of Co-operative Officials	Retail distribution, insurance, financial services, funeral services, motor trades (retail), retail pharmacy, travel industry, agriculture	1,986
National Association of Probation Officers	Probation staff (NOMS) and family court staff (Cafcass)	8,360
NASUWT The Teachers' Union	Education	293,855
National Association of Stable Staff	Racing staff employed by licensed race horse trainers	2,516
National Union of Journalists	Journalists and photographers (freelance, casual and staff) in newspapers, news agencies, broadcasting, magazines, online, book publishing and public relations	30,500
National Union of Mineworkers	Coal mining	1,855
National Union of Rail, Maritime and Transport Workers	Railways and shipping, underground, road transport	76,093
National Union of Teachers	Teachers	324,367
Nationwide Group Staff Union	All staff at Nationwide Building Society Group, including Nationwide, Cheshire, Derbyshire and Dunfermline Building Societies and Nationwide International Ltd	12,005
Nautilus UK	Merchant navy and all related areas	16,119
Prison Officers Association	Persons employed in any penal or secure establishment or special hospital as a prison officer, a nursing grade, operational support grade, a non-industrial stores grade and NHS secure forensic staff.	33,079
Professional Footballers' Association	Professional football	2,763

Prospect	Engineering, scientific, managerial and professional staff in agriculture, communications/ICT, defence, education, electricity supply, energy, environment, health and safety, heritage, industry, law and order, shipbuilding, transport	122,546
Public and Commercial Services Union	Government departments and agencies, public bodies, private sector information technology and other service companies	280,547
Skipton Union Representing Group Employees	Staff employed by the Skipton Building Society and wholly-owned subsidiaries	1,302
Society of Chiropodists and Podiatrists	NHS and private practice chiropodists and podiatrists	9,101
Society of Radiographers	National Health Service	21,958
Transport Salaried Staffs' Association	Administrative, clerical, supervisory, managerial, professional and technical employees of railways, London Underground, buses, road haulage, port authorities and waterways in Great Britain and Ireland. Also employees in the travel trade, hotel and catering industries.	24,662
Undeb Cenedlaethol Athrawon Cymru	Education – teachers and lecturers	3,946
Union of Construction, Allied Trades and Technicians	Construction and building	83,760
Union of Shop, Distributive and Allied Workers	Retail, distribution, food processing and manufacturing, catering, chemical processing, pharmaceutical, home shopping, warehouses, clerical, dairy process, call centres	412,441
UNISON — the Public Service Union	Local government, health care, the water, gas and electricity industries, further and higher education, schools, transport, community and voluntary sector, housing associations, police staff	1,317,500
Unite the Union	Aerospace, shipbuilding, vehicle building and automotive, motor components, chemicals, pharmaceuticals, offshore oil, textiles, graphical, paper and media, steel and metals, electrical engineering and electronics, IT, communications, servicing and general industries, local authorities, MoD, professional staff in universities, the National Health Service, voluntary and not-for-profit, energy, construction, finance and legal, civil air transport, docks, rail, ferries and waterways, passenger transport, commercial road transport, logistics and retail distribution, food, drink and tobacco, rural and agricultural	1,407,399
United Road Transport Union	Drivers, warehousing, ancillary workers in the logistics and food sectors	12,317
Unity	Ceramics (all areas)	4,184
University and College Union	Academic and academic related staff in higher education, further education, adult education, land-based education and prison education.	119,744
Writers' Guild of Great Britain	Television, radio, film, books, theatre, video games and multimedia	1,068
Yorkshire Independent Staff Association	Financial services – Yorkshire Building Society	1,365

Source: TUC (2013)