The Causes of Welfare State Expansion:

Deindustrialization or Globalization?

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Abstract

An influential line of argument holds that globalization causes economic uncertainty and spurs popular demands for compensatory welfare state spending. The argument has gained renewed prominence through the recent work of Geoffrey Garrett and Dani Rodrik. This paper argues that the relationship between globalization and welfare state expansion is spurious, and that the engine of welfare state expansion since the 1960s has been deindustrialization. Based on cross-sectional time-series data for 15 OECD countries we show that there is no relationship between globalization and the level of labor market risks (in terms of employment and wages), whereas the uncertainty and dislocations caused by deindustrialization have spurred electoral demands for welfare state compensation and risk sharing. Yet, while differential rates of deindustrialization explain differences in the overall size of the welfare state, its particular character -- in terms of the share of direct government provision and the equality of transfer payments -- is shaped by government partisanship. The argument has implications for the study, and the future, of the welfare state that are very different from those suggested in the globalization literature.

Introduction

It is commonplace to argue that the increasing openness of national economies has meant growing economic insecurity. This insecurity once supposedly fuelled demands for larger welfare spending as a form of insurance,[1] but the rising tide of globalization is now widely seen as making the meeting of these demands well-neigh impossible, and, indeed, has worked to reduce the size and scope of government.[2] An alternative view is one that combines this "second image reversed" with a concern for the political power of labor and the left.[3] This revisionist perspective suggests that the challenges promoted by globalization when met by strong left-labor power within the domestic political system combine to produce a compensation strategy that entails a large and vibrant welfare state. This paper challenges both of these views. Our argument, in short, is that most of the risks being generated in modern industrialized societies are the product of technologically induced structural transformations inside national labor markets. Increasing productivity, changing consumption patterns, and saturated demand for products from the traditional sectors of the economy are the main forces of change. It is these structural sources of risk that fuel demands for state compensation and risk sharing.

The transformation of labor markets in recent decades is revealed in a dramatic shift in the employment structure. The two traditional, and until recently leading, sectors of employment, i.e., agriculture and industry, have everywhere contracted. In the early 1960s an average of about 60 percent of total employment was in agriculture and manufacturing. In the next three decades this figure dropped by nearly half (see first column of Table 1). In the United States, for example, only five percent of the working age population lost employment in these sectors over the last three decades, whereas in countries such as France, Germany, Sweden and Denmark the comparable figure is fifteen percent or more. In addition to cross-national variance, the speed of the process has also varied a great deal over time, sometimes exhibiting a slow and steady trickle of new redundancies, at other times resulting in headline-grabbing factory closings and massive layoffs.

Table 1. Changes in the Employment Structure (changes from 1962 through 1993 in the shares of working age population).

	A	B	C	D	E	F
	Loss in Manuf. & Agric.	Gain in Priv. Services	A Not Absorbed by B	Change in Gov.t Civ. Serv.	Change in Military	Not Absorbed
Australia	13.4	11.6	1.9	3.8	-0.2	-1.8
Austria	16.9	5.5	11.3	6.2	0.1	5.0
Belgium	15.2	7.7	7.5	4.2	-0.7	4.0
Canada	8.1	11.4	-3.3	6.2	-0.7	-8.8
Denmark	21.0	5.2	15.7	14.9	-0.7	1.6
Finland	27.6	4.8	22.7	8.5	-0.6	14.9
France	20.9	10.4	10.6	3.9	-1.3	8.0
Germany	15.4	7.0	8.4	4.2	-0.2	4.4
Italy	19.5	8.7	10.8	4.0	-0.6	7.4
Japan	13.6	16.0	-2.5	0.4	-0.1	-2.8
Netherlands	13.3	16.8	-3.5	1.3	-1.2	-3.5
Norway	15.8	9.3	6.5	13.9	-0.4	-7.0
Sweden	17.7	2.9	14.8	14.4	-0.4	0.8
Switzerland	17.1	20.7	-3.7	4.2	-0.1	-7.7
United Kingdom	15.6	10.4	5.4	1.1	-0.5	4.9
United States	5.3	13.3	-8.0	3.5	-1.5	-10.0
With Australia:						
Average	16.0	10.1	5.9	5.9	-0.6	0.6
St. Dev.	5.0	4.7	8.2	4.5	0.4	6.7
Without Australia:						
Average	16.2	10.0	6.2	6.1	-0.6	0.7
St. Dev.	5.1	4.8	8.5	4.6	0.4	7.0

Individuals face significant risks as a result of these shifts. Those thrown out of a job, or threatened by the loss of employment, may find that the skills they have acquired are not easily transferable to other parts of the economy where employment may be expanding, viz., the service sector. Even where employment is available, a job outside one of traditional sectors often entails

significant losses in income, as well as the deprivation, at least in part, of pension rights, medical insurance, and other work-related benefits. For many, indeed, loss of employment in the traditional sectors entails complete removal from the active labor force. As one scholar notes, a significant part of this change in the occupational structure has taken place through the entry of young people into service employment and the early retirement of older workers from the traditional sectors.[4] This is attested to by the dramatic reduction in employment activity on the part of older workers who have in one way or another been pushed into "early retirement" during the last few decades.[5]

Broadly speaking, governments have responded to the transformation of the employment structure in three distinct ways. The first has been to promote employment in private services, often by deregulating product and labor markets and allowing greater wage dispersion, while using various forms of public insurance to compensate workers for the risks of having to find new jobs in services. The United States is the archetypical example of this strategy, but Canada, the UK, and more recently also the Netherlands, share some of the same features. In the US, since the expansion of private service employment has exceeded the relative modest loss in the traditional sectors, employment rates in that country have actually increased (as indicated by the minus signs in columns C and F of Table 1).

The second strategy is for the state to maintain extensive regulation of private services, as well as a relatively compressed wage structure, while simultaneously expanding employment in public services. Countries that have heavily engaged in this sort of strategy, most notably in Scandinavia, have also generally managed to elevate the total labor force participation rate. On the spending side, the result has been a substantial rise in government consumption, often complemented by an expansion of the state's public insurance functions in order to compensate for the risks associated with often very large employment losses in the traditional sectors (see the numbers for Denmark, Norway, and Sweden).

Finally, there are those economies where heavy regulation of labor and product markets have hampered a major expansion of private sector service employment, while at the same time the public sector has not been allowed to grow to any significant extent. In combination with the large losses that have occurred in the traditional sectors, this has led to a tremendous reduction in employment possibilities for those formerly active. Examples of states that have taken this route include Germany and France, and much of the welfare effort in these countries has been geared towards ensuring a relatively orderly and secure exit from the labor market, mainly through early retirement. Limiting labor force participation in this manner is expensive, and, depending of the severity of shifts in the occupational structure, is often supplemented by an increase in the state's insurance role (as in the other countries). This response therefore creates transfer- as opposed to consumption-heavy welfare states.

The three responses clearly resonates with Esping-Andersen's typology of welfare states (liberal, social democratic and Christian democratic),[6] and we believe that labor market institutions and partisan politics has played an important role in shaping these responses.[7] By focusing on these major shifts in the labor market structure, and the partisan responses to these, we thus point to a causal structure that can help make sense of one of the most influential contemporary typologies of welfare states. The main focus of this paper, however, is to convince the reader that growth in both transfers and government consumption — the two main components of welfare state spending — can largely be explained as a function of the severity of internally driven employment losses in the traditional sectors, *not* by forces in the global economy. Precisely because the underlying causal logic defines the available courses of political action, and hence helps us to account for the observed variance in welfare state forms, getting the causal story right is important. This is also important for the sake of understanding how the politics of the welfare state is likely to change in the future. Since the processes of globalization and deindustrialization have very different distributions in time and space, the pattern of welfare expansion (or contraction) should vary accordingly.

The remainder of this paper is organized into four sections. In the first we examine the arguments of two leading scholars, both of whom see the increasing integration of national markets into the international economy as the most powerful force affecting governments´ commitments to welfare spending. The evidence we present suggests that there is little empirical basis to sustain such a position. We then introduce and outline the logic of our own argument, focussing on the consequences of the employment dislocations connected to these major shifts in the occupational labor market structure since the early 1960s. In the third section this argument is tested on data for 15 OECD countries over a period of 33 years, followed by an analysis that defends our argument and results against the charges that deindustrialization is a result of either government spending itself or globalization. We conclude with a discussion of why domestic, as opposed to international forces, have been ignored in recent research, and we point to several areas where future research could prove fruitful.

Discounting globalization

The argument that globalization leads to welfare state expansion rests on two causal mechanisms. First, trade and capital market integration is said to expose domestic economies to greater real economic volatility which implies higher income and employment risks for workers. Second, greater labor market risks are hypothesized to generate political demands for expansionary spending policies that will cushion and compensate people for such risks. Rodrik focuses on the effects of trade, and explains the logic in the following manner:

> More open economies have greater exposure to the risks emanating from turbulence in world markets. We can view larger government spending in such economies as performing an insulation function, insofar as the government sector is the "safe" sector (in terms of employment and purchases from the rest of the economy) relative to other activities, and especially compared to tradables.[8]

Garrett extends the trade openness argument to globalization more broadly, including growing capital market integration:

> [P]erhaps the most important immediate effect of globalization is to increase social dislocations and economic insecurity, as the distribution of incomes and jobs across firms and industries becomes increasingly unstable. The result is that increasing numbers of people have to spend evermore time and money trying to make their future more secure.[9]

Left governments are more responsive to popular demands for compensation than right governments, according to Garrett, and his emphasis on capital market openness is also novel. The trade openness thesis, however, has a long history in political science, going back to the seminal works of Cameron, Ruggie and Katzenstein.[10] To our knowledge the trade argument has not been subject to any serious challenges, and it stands out as one of the important explanations for the rise of the welfare state since the Second World War. The role of capital market integration is more contentious because of the effects such integration may have on macroeconomic autonomy,[11] but it is a logical extension of the trade openness argument.

We find it surprising that not more critical attention has been devoted to the alleged linkage between international economic exposure and labor market risks. Although it is undeniable that international market volatility increases labor market risks, whether *openness* is related to risk depends on the extent to which international market volatility is greater than domestic market volatility. It is not sufficient, for example, to show that international price volatility, measured as terms of trade instability, is related to spending.[12] In addition, at least one of two conditions must obtain: i) price volatility in international markets is greater than in domestic markets, and ii) trade concentrates risks more than it diversifies it.

There are no theoretical reasons to expect the first condition to hold, and trade theory does not make strong predictions about the second. Although trade concentrates risks to the

extent that it leads to specialization, it diversifies risks to the extent that it occurs across several national markets. Which effect dominates depends on the covariance of volatility across product and national markets. If specialization occurs within product categories that are exposed to similar cycles (complementarities), while trade occurs across national markets that are subject to different cycles, trade will actually lead to lower overall volatility. Since the bulk of trade within the OECD is intra-industry, and occurs across numerous national markets, there is little a priori reason to expect that trade is associated with greater volatility. But only empirical evidence can resolve the issue.

For this purpose we have compared volatility in output, employment, and wages across the manufacturing sectors of 16 OECD countries with very different exposures to trade (see Figure 1). Output and wages are measured in real terms, and volatility is defined as the standard deviation of annual growth rates between 1970 and 1993. This formula is identical to the one used by Rodrik to measure volatility in terms of trade,[13] but here we are able to explore directly whether volatility in real variables is related to trade. As a baseline for the comparison, the figure shows the average volatility of a completely non-traded (but private) service sector — community, social, and personal services (indicated by the three dotted horizontal lines).[14]

Contrary to the logic of the trade openness argument, there is *no* relationship between the export dependence of manufacturing (measured as the value of exports divided by manufacturing value-added) and any of the volatility measures. The only variable weakly related to export dependence is output volatility, but the association is in the *opposite* direction of the one implied by the trade openness argument. Nor is there any evidence that the traded manufacturing sector is more volatile than the average for the nontraded service sector. Finally, it is noteworthy that there is no association between the level of volatility and Katzenstein's distinction between small corporatist welfare states and large liberal (or statist) ones.

Figure 1. Trade Dependence and Manufacturing Volatility
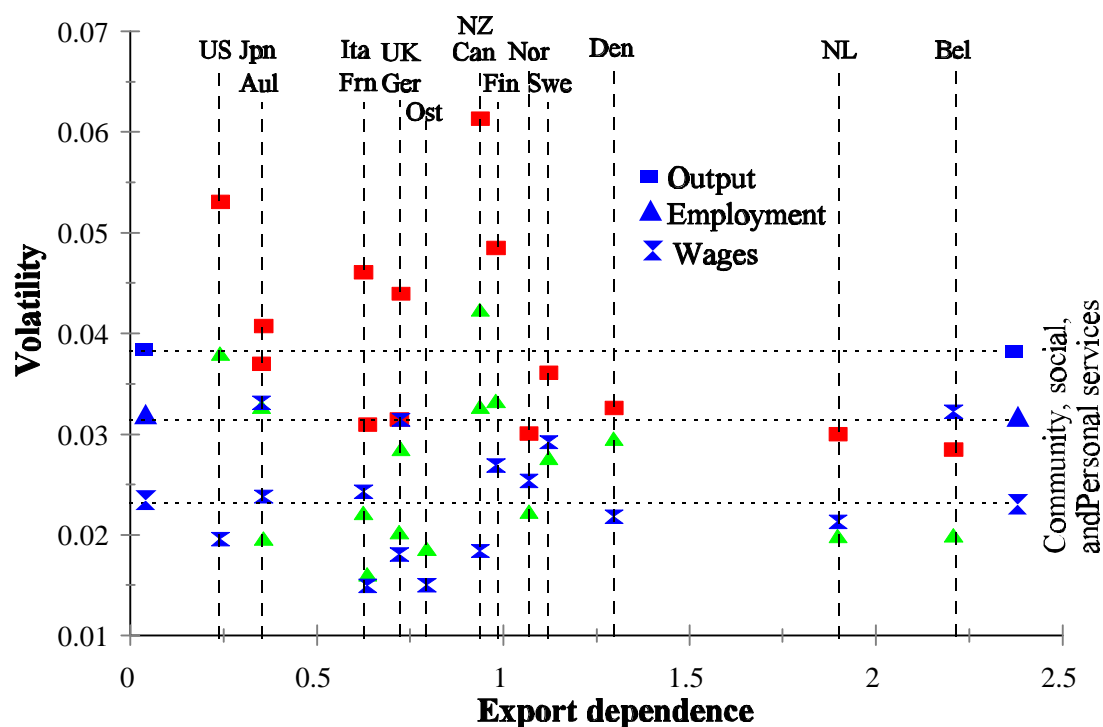
Notes: Export dependence is the total value of manufacturing exports divided by value added; volatility is the standard deviation in the rate of growth in manufacturing output, employment, and wages in the period 1970-93. Output data is not available for Austria; only employment data is available for New Zealand.

Sources: OECD, *The OECD STAN Database* (1994).

     If we changed the x-axis in Figure 1 to measure capital market openness instead of trade openness, the pattern would be no clearer. It does not appear to be the case that greater openness to the international financial system increases the volatility of the domestic real economy. Moreover, even if that proved to be the case, greater exposure to speculative capital flows may well be associated with a countervailing reduction in the capacity of governments to respond to pressures for compensation.[15]

But if these findings are correct, how is it possible that previous work has found such a clear link between globalization (especially trade openness) and spending? To answer this question we would like to draw attention to some important methodological issues in this work. Katzenstein never presents any systematic evidence that openness and spending are related.[16] Instead, he describes how policy-making in small and open economies have led to a substantial expansion in the government's role in the economy. Clearly, it is difficult to assess whether this is due to trade-openness or some other features that these countries have in common. Cameron offers some cross-sectional evidence,[17] but this is in the form of correlation coefficients or very simple regressions that fail to control for a number of factors (such as the size of the dependent population) which we now know are important. In fact, our data support Cameron's results in the sense that there *is* a cross-sectional association between openness and spending (r = .6), but this relationship does not hold once proper controls are included in the statistical model (as we shall see). In the case of Rodrik,[18] both cross-sectional and pooled time-series evidence is presented, but the analysis includes a large number of less developed, and mostly non-democratic, countries for which our argument is not necessarily applicable.[19]

The results that are most relevant for our purposes are presented by Garrett.[20] Not only does Garrett focus on the same countries that we do, he also includes capital market integration in his analysis. Furthermore, Garrett's analysis picks up both cross-national and cross-time variance, and allows for a large number of controls. It is therefore of considerable interest to replicate and further examine Garrett's results, as we have done in Table 2. The first two columns of the table replicates Garrett's results using change in government transfers and in civilian government consumption as the dependent variables.[21] First note that the results for trade openness are weak and statistically insignificant. Somewhat surprisingly, Garrett's own results do not support the trade openness argument. On the other hand, the coefficient for the interaction between what Garrett calls left labor power and capital market openness is positive and statistically significant, supporting Garrett's thesis that open capital markets leads to higher spending when the political

left is strong and unions are encompassing (left labor power is a composite index of these variables).

Table 2. Replicating Garrett's Regression Results (t-statistics in parentheses).

	Garrett's results		Our results	
	Transfers	Consumption	Transfers	Consumption
Lagged dependent level	-0.141***	-0.140***	-0.094***	-0.061***
	(-4.65)	(-5.49)	(-3.21)	(-3.55)
Trade openness	-0.008	-0.016*	0.005	0.004
	(-0.74)	(-1.73)	(0.50)	(0.44)
Capital openness	-0.192	-0.380**	-0.045	-0.012
	(-1.27)	(-2.45)	(-0.31)	(-0.12)
Left labor power (LLP)	0.067	0.134	0.116	0.196**
	(0.76)	(1.38)	(1.36)	(2.04)
LLP*Trade openness	0.001	0.001	-0.001	-0.001
	(0.41)	(1.00)	(-0.87)	(-0.86)
LLP*Capital openness	0.066**	0.075***	0.027	0.013
	(2.38)	(2.68)	(1.05)	(0.71)
Growth	-0.168***	-0.137***	-	-
	(-10.50)	(-11.53)		
Old population	0.135**	0.006	-	-
	(2.43)	(0.10)		
Unemployed	0.683***	0.008	-	-
	(3.67)	(0.42)		
Unexpected growth	-	-	-0.077***	-0.097***
			(-5.75)	(-12.14)
Automatic transfers	-	-	0.558***	-
			(6.93)	
Automatic consumption	-	-	-	0.970***
				(14.94)
Adjusted R-squared	0.4235	0.4835	0.4235	0.6735
Number of observations				

Significance levels: * < 0.10; ** < 0.05; *** < 0.01

Note: The results for period and country dummies are not shown.

The results, however, turn out to be highly sensitive to the precise specification of the control variables. One of these controls is GDP growth which Garrett explains with reference to an article by Roubini and Sachs.[22] In that article the authors argue that governments make spending decisions based on economic forecasts which rely on actual growth in the recent past. If growth turns out to be unexpectedly high, spending as a proportion of GDP will be smaller than anticipated, while spending will be higher if GDP growth is unexpectedly low.[23] They therefore define an unexpected growth variable which is the difference between actual growth in a given year and average growth in the previous three years. This variable is obviously correlated with GDP growth, but it is not identical, and we have consequently substituted Roubini and Sachs' variable for Garrett's simple GDP growth variable in columns 3 and 4.

In addition, we made some refinements to the variables intended to remove non-discretionary components of spending. In the case of transfers the relevant controls are the rate of unemployment and the size of the old age population. These variables can be improved by taking account of the fact that the replacement rates for non-employment vary across time and countries. A more accurate measure for non-discretionary transfers would therefore be to multiply the change in the size of the dependent population (i.e., the proportion of unemployed and old people) by the replacement rates at any given point in time. In turn, average replacement rates can be approximated as the share of transfers in GDP relative to the share of the dependent population in the total population.[24] This composite variable is used in column 3 in place of the unemployment rate and the old population rate.

In the case of government consumption the number of unemployed and old people is irrelevant (as Garrett's results clearly show), but there is a different non-discretionary effect that Garrett does not take into account. Because costs in public services (especially wage costs) tend to increase at the same rate as in the rest of the economy, while productivity does not, a constant level of provision will result in prices on government services rising faster than in the economy as a whole. This non-discretionary component of government consumption can be removed by

another measure, called automatic consumption, which is the share of government consumption in GDP times the rate of growth in the price deflator for government services divided by the rate of growth in the price deflator for the entire GDP.[25]

From the rise in explained variance, we can see just how important relative price changes are for government consumption. More importantly, the effects of capital market openness completely disappear once these refined controls are included. This is the case whether we look at consumption or transfers. With respect to trade openness, one can see that the parameter on this variable is insignificant as before, but the sign on the interaction term is now actually in the wrong direction. In short, there is no suggestion in Garrett's data of a relationship between globalization and welfare state spending once we use more refined control variables. The only result that holds up is that left-labor power has a significant expansionary effect on government consumption — a finding that is echoed in the more extensive analysis presented below and by numerous other studies.[26] Of course, this does not undermine Garrett's main conclusion that globalization is compatible with a large welfare state, but it does suggest that we have to seek the explanation for the expansion of the welfare states in domestic rather than in international conditions.

Deindustrialization and the Labor Market Risk Structure

As do Garrett and Rodrik, we believe that exposure to risk in the labor market is a powerful determinant of peoples' preferences for state protection and public risk sharing. Unlike Garrett and Rodrik, however, we believe that the main sources of risk are to be found in domestic economic processes. In particular, we argue that the labor market dislocations associated with major shifts in the sectoral-occupational structure have been a driving force behind the expansion of the welfare state since the early 1960s. To get a sense of the numbers, in 1962 about 60 percent of the labor force in the OECD area was employed in agriculture or industry; 33 years later this figure was down to about 30 percent. As we document below, this massive sectoral shift is the outgrowth of deep forces of technological change that have coincided with progressive

market saturation and shifting patterns of demand -- structural-technological conditions that also characterized the industrial revolution. Given what we know from the work of Esping-Andersen,[27] Korpi,[28] Stephens,[29] and others about the relationship between the rise of industry and the early development of the welfare state, one would expect such a massive transformation of the occupational structure to be of great importance in the demand for, and supply of, welfare state programs.

The importance of changes in the occupational structure depends on the transferability of skills and social benefits. Transferable skills protect against market vagaries by making individuals less dependent on a single employer, or on employers in a particular branch of the economy. Labor market risks are therefore generated across the interfaces between economic sectors requiring very different types of skills. This logic is reinforced when we consider that privately provided social benefits such as health insurance and pensions also tend to be constrained by the transferability of skills. The reason is that when skills are firm-specific, employers have an incentive to provide non-transferable company benefits, both as a tool of control over its workforce, and as an incentive for their employees to acquire additional firm-specific skills. Correspondingly, if skills are industry-wide, there is a rationale for employers in that industry to provide benefits that are transferable across firms, but only within the industry. Although the latter depends on the ability of employers to collude in the provision of both skills and benefits, the point is that *the transferability of benefits will not exceed the transferability of skills in the absence of state intervention*.

The approximate correspondence between the scope of employer-sponsored insurance and the transferability of skills tells us a great deal about the sources of demand for welfare state expansion. Once a worker is permanently dismissed from a firm or occupation within a sector, and therefore has to either transgress a skill boundary or remain non-employed, both skills and benefits will be forfeited or downgraded. In some cases this means that workers are left outside employment with no or few means of support; in other cases it means that workers find new jobs

at substantially reduced wages and benefits levels. It is therefore only through the mediation of the state that workers can protect themselves against the risks of major shifts in the economic and occupational structure. Such protection comes in the form of state-guaranteed health and old age insurance (which makes it possible to move across sectoral interfaces without losing benefits), as well as through early retirement and certain forms of disability insurance which facilitate a relatively painless exit from the labor market (and therefore makes it possible *not* to have to move across the skill interfaces). When skills and benefits do not travel well, while large numbers of people face the risks of having to make such "travels", we would therefore expect demand for state-sponsored compensation and risk-sharing to be high.

Such demands are not necessarily opposed by employers, as commonly assumed in the welfare state literature, and our logic highlights one of the most important reasons why. Without assurances from the state workers will be less likely to make risky investments in non-transferable skills -- skills that are very valuable to employers. Especially with the transition to more knowledge-intensive forms of production, firms that rely on firm- and industry-specific skills share with their employees an interest in strengthening the aspects of the welfare state that reduce the riskiness for workers of making investments in specific skills. Though clearly at odds with the standard perception of business always opposing social spending, the argument is consistent with an emerging new body of scholarship that documents the supportive and often pro-active role of employers in developing and shaping the modern welfare state.[30]

Like the distinction between agriculture and industry in the latter half of the previous century, the distinction between manufacturing and services represents one of the most important economic interfaces affecting the transferability of skills in the latter half of this century. Whereas skills *within* agriculture, manufacturing or services are typically transferable to some degree, most skills acquired in either manufacturing or in agriculture travel very poorly to services occupations. Even low-skilled blue-color workers find it exceedingly hard to adjust to similarly low-skilled service sector jobs because they lack something that, for lack of a better label, is sometimes called

"social skills". In addition, as noted above, the shift in the distribution of employment between these sectors has been quite dramatic since the beginning of the 1960s. If our theoretical argument is correct, therefore, we should find at least some evidence that deindustrialization has had an expansionary effect on the welfare state since the early 1960s. This does not imply that no skills are transferable from industry to services, or that other skill interfaces in the economy are irrelevant. Our only claim is that deindustrialization picks up one salient empirical manifestation of our theoretical logic. We are of course quite happy to concede that the use of deindustrialization as a proxy for the underlying theoretical variable – the risk of moving across skill boundaries – only establishes a lower bound for the explanatory power of our general argument.

Considering this obvious link between labor force transformations and welfare state spending, it is truly remarkable how little attention deindustrialization has been accorded in the study of welfare state dynamics. Not a single large-N, cross-national study of the welfare state has to our knowledge focused on deindustrialization as a driving force, or even included it as a control variable. Although Wilensky,[31] Flora and Alber,[32] and others have pointed to the importance of economic transformations, industrialization in particular, in explaining the rise of the welfare state, their logics – problems associated with industrialization such as dangerous working conditions and income security for those denied access to employment[33] as well as demographic structural changes induced by the growth in overall economic well-being[34] – are very different from ours and not clearly applicable to the phenomenon of deindustrialization that we are interested in. Perhaps this omission in the literature is due to a misconception that deindustrialization is fairly uniform across countries and time, and therefore cannot explain cross-national and temporal variance in the speed of welfare state expansion. In fact, however, deindustrialization varies greatly in both time and space. For example, in an early industrializing country like the United States, industrial employment as a percentage of the adult population declined by only 3 percentage points between 1962 and 1993, whereas for a late industrializer like Sweden, the figure is 13 percent.

Both the magnitudes of the sectoral shifts in employment, and the cross-national differences, are magnified by the decline of agriculture. Although we usually associate agricultural decline with the *rise* of industry, the two processes started to move *in phase* in the early- to mid-1960s, particularly in countries that industrialized late. Agricultural decline is due to the same forces of structural-technological change -- explored below -- and when we talk about deindustrialization in the following we have in mind this secular, long-term and structurally-driven process of labor shedding in *both* agriculture and industry beginning in the early 1960s.

While we maintain that deindustrialization is a crucial (and neglected) source of welfare state expansion, we are not implying that political and institutional factors are unimportant. As Garrett emphasizes in his work, the welfare state is a mechanism for redistribution as well as risk-sharing, and we would therefore expect partisan governments and organized interests to shape social policies in order to benefit the distributive interests of their own constituencies. As argued well by Garrett, where unions are strong and centrally organized, and where left governments have been dominant, the welfare state can be expected to assume a more redistributive form.[35] Likewise, redistribution is affected by the location of the median voter insofar as political parties adopt policies that will appeal to the median voter.[36] The lower the income of the median voter, and the more exposed to risk, the greater the pressure for redistributive policies.[37] Since low-income workers in tenuous labor market positions are less likely to vote than better educated and higher-income people,[38] an indirect measure of the median voter location is the level of participation in national elections.

The explanatory salience of these political variables depends on the extent to which we look at spending categories that have a redistributive effect. Aggregate levels of transfers are not necessarily higher under left than under right governments insofar as such transfers can be used to address labor market risks without affecting income or status differentials.[39] By contrast, government service provision is inherently redistributive because it offers people equal access to services -- such as education, health care and housing -- which are paid for through taxation. In

addition, egalitarianism and public sector expansion are causally related because earnings

compression undermines the growth of low-productivity, price-sensitive, private service sector

jobs and puts pressure on the government to provide jobs in the public sector.[40] So while

deindustrialization everywhere propels growth of welfare state spending, whether in the form of

government transfers or consumption, we expect the distributive aspects of the rising service

economy, and the private-public sector mix of employment, to vary according to political

parameters.

Findings

We use an error correction model of the type introduced in Table 2, with changes in government

transfers and civilian government consumption as the dependent variables. The model has the

following form:

$$\Delta Y_{i,t} = \alpha + \beta_1 \cdot Y_{i,t-1} + \sum \beta^j \cdot X^j_{i,,t-1} + \sum \beta^j_\Delta \cdot \Delta X^j_{i,,t} + \epsilon_{t,}$$

where Y is a spending variable, and X is an independent variable. The subscripts i and t refer to the

particular country and time period, respectively, while the superscript j refers to the particular

independent variable. Δ is the first difference operator.

This model has a number of useful properties, and it is consistent with recommendations

on specifications that are capable of capturing both long- and short-term dynamics in a pooled

time-series-cross section context.[41] First, the parameter for the lagged dependent level variable

(β_1) provides an easy check on equilibrium properties. β_1 should be between -1 and 0 to ensure

that the incremental effects of a shock to any exogenous variable are progressively reduced over

time, causing spending to converge to a long-term equilibrium. For readers more familiar with

models that use the *level* of spending on the left-hand-side, the current model can be reformulated

into such a model by simply adding $Y_{i,t-1}$ on both sides of the equal sign. This yields $Y_{t,i} = \alpha + (1 +$

β_1) $\cdot$ $Y_{i,\,t-1}$ + ... , where $(1 + \beta_1)$ is the new parameter for the lagged dependent level variable.

There is an small advantage of using the error correction formulation, however, because the

model yields estimates of R^2 that are more informative of the variance explained by the

independent variables of interest .[42] Otherwise the choice between using levels and first differences

makes no difference for the results.

The other useful feature of the present model is that it enables us to separate out

permanent and transitory effects of any independent variable. Although not intuitively obvious, it

can be shown that the parameter for a lagged independent *level* variable -- X_{t-1} -- is a measure on

the permanent (or lasting) effect of a one-off change in that variable, while the parameter for a

change variable -- ΔX_t -- is a measure of the transitory (or passing) effect of a one-off change in

that variable.[43] The long-term permanent effect of an independent variable can be calculated by

dividing the parameter for the lagged level of that variable by minus the parameter for the lagged

dependent level variable: $\beta^j/\text{-}\beta_1$ (assuming that β_1 between 0 and -1). If a variable exhibits *only*

transitory effects, i.e., if only the parameter for its first difference is different from zero, spending

will eventually revert back to its original level unless the independent variable changes

continuously (assuming again that β_1 is between 0 and -1). Since all the theoretical variables are

defined as proportions (either of GDP or of the working age population), they cannot grow (or

fall) indefinitely, and will therefore have no lasting effects on spending *unless* the parameters for

the their lagged levels are significant.[44] Hence, the parameters for the change variables are of

interest only if we care about the specific time dynamics of an independent variable. To keep the

results simple, we have therefore only included first differences for those independent variables

that are of particular theoretical interest.

We use fairly much the same set of explanatory variables for both transfer spending and

civilian government consumption outlays. The exact variable definitions and data sources are

summarized in Appendix A. The only difference between the two specifications is the

"autonomous" spending term in each equation. In the equation for transfers, this item is based on

the prevailing replacement rates of the program (at time t-1) times the first difference in the size of the clientele for such programs. In the equation for government consumption, the autonomous spending term is a function of the prevailing level of spending (at time t-1) times the rate of change in the relative prices confronting government. As discussed above, in both instances the argument is that there are non-discretionary elements to spending which needs to be eliminated in any well-specified model.

In addition to the lagged level of the spending component, there are four sets of variables in each specification. First, there is a set of variables meant to detect whether international or domestic economic sources are driving spending. On the international side, we have included measures of trade openness as well as capital mobility. On the domestic side, we have introduced a measure for deindustrialization, as well as a variety of political variables. These are the level of electoral turnout, the left-right partisan composition of the government, and a measure of the relative strength of labor within the industrial relations system. The remaining control variables have already been introduced in the discussion of Garrett's results.

Deindustrialization is defined as 100 minus the sum of manufacturing and agricultural employment as a percentage of the working age population. The base of 100 is somewhat arbitrary. For example, one could have used the peak of employment in agriculture and manufacturing as the base; a number that varies across countries. However, the statistical analysis is insensitive to the choice of base due to the inclusion of a full set of country dummies.[45] If each country has a unique base, it simply alters the nationally specific intercepts, and the dummies permit these to take on any value. Also, it should be emphasized that because deindustrialization is defined as a proportion of the *working age population* it is *not* the case that public employment, which is closely related to government consumption, will alter the denominator. The only way that government consumption, or any other form of government spending, can affect the deindustrialization measure is if spending is *causally* related to the number of people employed in agriculture or industry – an (unlikely) possibility we will consider in the next section.

The equations have been estimated using a pooled data set with 15 countries and a temporal domain ranging from 1961 up to and including 1993, a period of 33 years. Tests for heteroskedasticity in both pooled regressions suggested the need to correct for this problem and so we employed Beck and Katz´s method for deriving panel corrected standard errors.[46] The results for two simple additive models, one for each category of spending, are presented in Table 3. Separate runs using robust regression techniques (not shown) yield almost identical results, so our findings are not driven by outliers.[47]

First note that none of the globalization variables registers a statistically significant impact on government transfers. For consumption, trade and capital market openness both exhibit small significant effects, but for capital mobility the effect is entirely transitory, while for trade it goes in the opposite direction of that predicted by the openness argument. It is conceivable that the negative effect for trade reflects its differential welfare effects. Thus, while growing exposure to competition from low wage countries raises the uncertainty for those already at high risk,[48] trade may well be welfare-improving for all others.[49] Whatever the explanation, the magnitude of the effect is small. Thus, for each percentage point that the foreign sector grows, the long-term equilibrium level of civilian government consumption declines by only .07 percent.

Compare these results to those for deindustrialization. For each percent decline in employment in the traditional sectors, the long term target equilibrium for social transfer spending increases by approximately .4 percent. The effect corresponding effect for government consumption is .6 percent, while the short-term impact is to elevate the actual spending level by

Table 3. Regression Results for Government Spending (t-scores in parentheses).

		Transfers	**Consumption**
Globalization variables	Lagged dependent level	-0.067***	-0.051***
		(-3.17)	(-3.78)
	Trade openness	-0.005	-0.004*
		(-1.21)	(-1.72)
	Δ Trade openness	0.018	-0.005
		(2.09)**	(-0.99)
	Capital openness	0.010	-0.007
		(0.35)	(-0.39)
	Δ Capital openness	0.016	-0.069**
		(0.29)	(-2.07)
Deindustrialization variables	Deindustrialization	0.044***	0.031***
		(3.10)	(3.18)
	Δ Deindustrialization	0.142***	0.090***
		(3.69)	(4.08)
Political variables	Left government CoG	-0.062	0.090***
		(-1.24)	(2.67)
	Δ Left government CoG	0.041	0.049
		(0.62)	(1.19)
	Electoral participation	-0.005	0.012***
		(-0.69)	(2.67)
	Strength of labor	0.078	0.898***
		(0.09)	(2.88)
Controls	Unexpected growth	-0.077***	-0.092***
		(6.43)	(14.59)
	Automatic transfers	0.845***	
		(9.53)	
	Automatic consumption		0.971***
			(15.87)
	Adjusted R-Squared	0.47	0.63
	Number of observations	495	495

Significance levels: * < 0.10; ** < 0.05; *** < 0.01

Note: The results for country dummies are not shown.

1 percent for every percent decrease in employment in the traditional sectors. In other words, a standard deviation change in deindustrialization is associated with roughly one half of a standard deviation change in spending, which implies that about half of the variance in spending is explained by the deindustrialization variable. All effects of deindustrialization are statistically significant at a .01 level or better. From these results it seems justified to conclude that the effects of the domestic economic variables carry far greater weight than globalization in shaping government spending.

Another feature of the findings deserves emphasis: The effect of de-industrialization *persists* over time. Apparently spending gets "locked in" by organizational and institutional factors that are exogenous to our model. As argued by Pierson, spending itself creates political clienteles that will press for further spending and resist attempts at retrenchment.[50] Hence, even though the process of de-industrialization is the causal agent in the expansion of the welfare state, the disappearance of this causal agent will not necessarily lead to retrenchment -- "merely" retard further expansion. However, the character of the political game over welfare policies is likely to change when compromises involving overall expansion are no longer feasible; a conjecture that deserves further exploration considering that the process of deindustrialization is coming to a halt in many countries.

None of the political terms register any impact on transfers. As discussed previously, the *level* of transfer payments is not necessarily a contentious partisan issue unlike the distributive *composition* of such payments. As Esping-Andersen notes, "there is no reason to expect that expenditure commitments, as such, should be related to left-party power".[51] Right as well as left governments, exposed to the pressures of democratic politics, recognize the need to address the risks that people encounter in the labor market, and these risks are largely captured by the deindustrialization variable. Where they obviously differ is in terms of whose interests in the electorate are accorded more or less attention, and this is a distributive issue to which the aggregate level of transfers does not speak.

In this respect the logic of government consumption is very different since public provision of services directly reduces inequalities in peoples' access to education, health care, etc., and because public employment is used by left governments to support egalitarian wage policies.[52] Unsurprisingly, therefore, all of the political variables turn out to affect civilian government consumption in the predicted direction. Thus each percentage increase in the electoral participation rate raises the target level of spending by about .15 percent. Likewise, a typical left government spends about 2 percent more than a typical right government if we look at the long run.[53] The strength of labor in the industrial relations system also has an upward effect on spending, as expected.

These results, however, disguise a richer causal story that cannot be captured by simple additive models like those presented in Table 3. As argued by Garrett and others, the effects of forces that create labor market risks are conditional on political and institutional factors, and our argument implies several causal pathways for the relationship between deindustrialization and spending. In order to pinpoint these mechanisms and to bring out the interaction effects that are implied by the theoretical argument, we have conducted a causal path analysis. The results from this analysis are summarized in Figure 2. The effect of deindustrialization runs along two different paths. First, deindustrialization raises the generosity of transfer payments as governments respond to electoral pressures for insurance against labor market risks (path *a*). Generosity is here measured as the ratio of transfers to GDP over the ratio of the non-working to the total population. Thus, if transfers as a proportion of the total size of the economy rise faster than the share of the non-working population, generosity will be increasing. As before, we use a pooled error correction model with changes in generosity on the left-hand-side, and the lag of the level of generosity plus all the variables in the second column of Table 3 on the right-hand-side. The coefficient next to the causal arrow measures the permanent long-term effect of deindustrialization. In substantive terms, the estimated coefficient suggests that a one percent loss of employment in the traditional sectors will raise the level of generosity by a similar amount,

adjusting for all indirect effects. In turn, higher generosity obviously implies higher government

transfers, so deindustrialization is directly related to spending via generosity.

Figure 2 The causal mechanisms linking deindustrialization to spending.
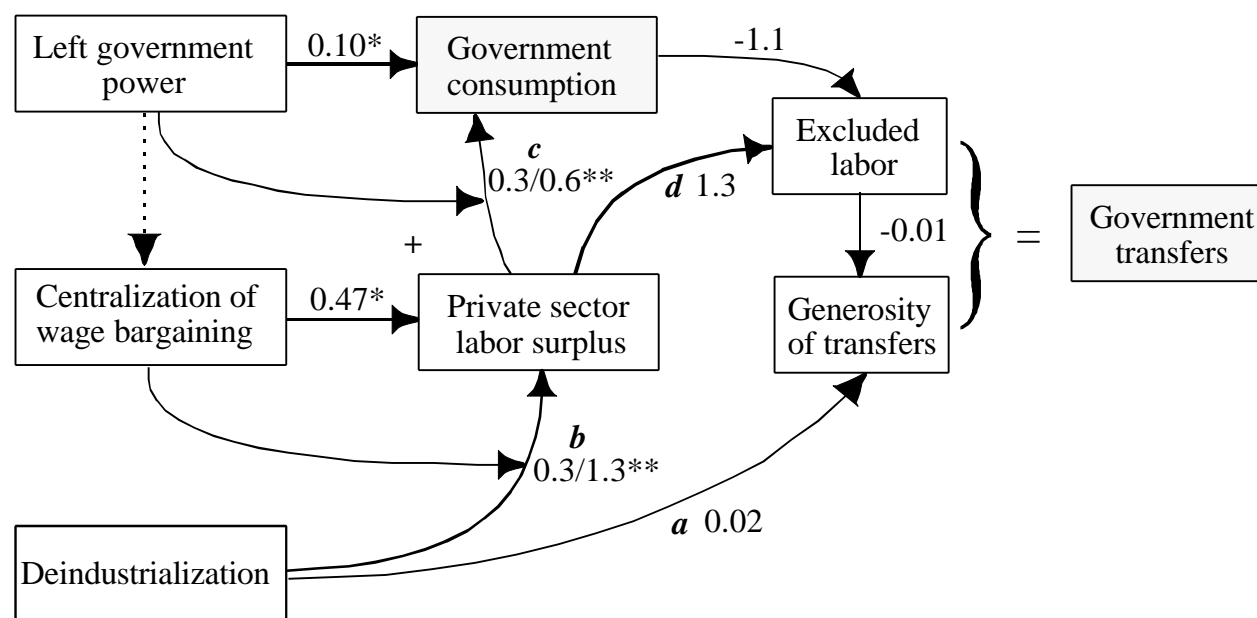
a Electoral pressures to insure against labor market risks

b Deindustrialization creates redundancies when there are constraints on private service sector employment growth

c Electoral pressures to deal with employment problems (which are accommodated primarily under left governments)

d Redundant labor that is not being employed in either private or public services will increase the number of people reliant on transfers

*) Log-term sffect when deindustrialization (alternatively: private sector labor surplus) is at its mean value; **) effect of deindustrialization (alternatively: privat sector labor surplus) when the conditioning variable is one standard deviation below or above its mean

Note: All parameters are long-term permanent effects; all are significant at a .05 level or better. Variables are defined in text and in Appendix A.

The second causal path goes through the employment effects of deindustrialization, which are conditioned by labor market institutions and partisan politics. Insofar as redundant labor in the traditional sectors are not being picked up by new employment in private services, path *b*, governments are likely to face electoral pressures to create employment by expanding public provision of services (path *c*). This effect, however, is conditioned by two political-institutional variables. First, we know from past studies that the capacity of the private service sector to generate employment is negatively related to wage compression.[54] The likely reason for this negative relationship is that productivity grows at a much slower rate in most services than in most manufacturing. Hence, in labor-intensive services, which include many personal and social services, a tightly coupled and compressed wage structure will result in rising relative prices and therefore in a slower rate of new job creation. Because centralized wage bargaining is closely related to wage compression,[55] this phenomenon is observed primarily in northern Europe where bargaining is highly centralized, and it shows up clearly in our results as an interaction effect between deindustrialization and centralization of bargaining.

More specifically, in liberal market economies with decentralized bargaining, such as Canada or the United States, most or all employment losses in the traditional sectors are picked up by growth in private service employment, and surplus labor in the private sector, measured as the difference between deindustrailization and changes in private service sector employment, is consequently small or absent. By contrast, when bargaining is centralized, such as is the case of Germany or Sweden, deindustrialization produces large numbers workers who cannot find employment in private services. In terms of our regression analysis, which includes controls for labor force participation rates and economic growth, when centralization is one standard deviation below the mean, a one percent drop in manufacturing employment results in a 0.3 percent increase in the private sector employment surplus, whereas when centralization is one standard deviation *above* the mean this effect is about four times greater.[56]

There is a close relationship between left partisan control over government power and centralization of wage bargaining (r=.8), and although this relationship has emerged only through a complex historical process without a clear-cut causal order, it is among the liberal market economies – those dominated by flexible labor markets and liberal governments – where governments are faced with the fewest problems of private sector labor redundancies. Instead, these countries "pay" for deindustrialization in the form of higher wage inequality, partly cushioned by increased generosity of transfer payments (path *a*). Other countries have dealt with the employment pressures from deindustrialization in ways that also depend on the partisan orientation of the government. Specifically, wherever the left holds strong positions in government, service employment is expanded by increasing the direct provision of government services, i.e., through a rise in government consumption (path *c*). In substantive terms, when left partisanship is one standard deviation above the mean, a one standard deviation increase in the private sector labor surplus is associated with a commensurable increase in government consumption. Right governments, which are mostly of a Christian democratic bent when we consider countries with centralized bargaining systems, shy away from expanding public service production, and the increase in consumption is correspondingly less than half the increase in the private sector labor surplus in these cases.

Finally, when redundant labor is not absorbed into public service employment, the private sector labor surplus will register in the form of early retirees, disability pensioners, and unemployed workers -- labeled *excluded labor* in Figure 2 – who have to be cared for through a variety of cash benefits arrangements (path *d*). This leads to an increase in government transfers, the size of which depends on the generosity of these transfers (transfers is simply "generosity" times "excluded labor"). The increase is not directly proportional to the increase in the excluded labor force because the latter causes a dilution effect on the generosity of transfers, presumably because governments will seek to limit the budgetary pressures by cutting other welfare programs. Still, the net effect is a significant increase in total government transfers.

In combination, the results from these regression analyses strongly support the deindustrialization argument. Thus, as deindustrialization increases, both government transfers and government consumption rise, but the latter effect is particularly strong when wage bargaining is centralized and when governments are dominated by left parties. Under right governments, most of the effect comes through increases in transfers. The reason is that right governments will not compensate for private sector labor redundancies through public service production, using instead transfer schemes, such as early retirement, to facilitate labor market exit. Since centralized wage bargaining reduces the absorptive capacity of workers who are made redundant in the traditional sectors, the effect on transfers is particularly strong when bargaining is centralized.

The Sources of Deindustrialization

Our results strongly suggest that deindustrialization, not trade or capital market openness, is the driving force behind the expansion of government spending on both transfers and services. Nevertheless, it could be objected that deindustrialization may itself be a consequence of trade and financial openness, or that it is caused by, not causing, government spending. Even though either one of these possibilities are interesting in their own right, they would obviously radically alter the picture we have presented of the relationship between deindustrialization and spending. In order to complete our argument, we therefore have to show that deindustrialization is largely driven by domestic factors other than spending itself.

Economists are divided on the question whether trade causes employment losses in the traditional sectors. On one side of the debate, reflecting not only a particular economic theory but also a generally popular view (the "giant sucking sound"), is the idea that the sources of deindustrilization in the West during recent decades lays squarely in the competitive pressures emanating from Third World producers.[57] From this perspective, changes in the North-South trade have been estimated to account on average for 50 percent of the reduction in manufacturing

that occurred between 1970 and 1990.[58] In addition, it can be argued that the removal of restrictions on capital makes it increasingly easier for businesses to relocate production facilities to countries with lower wage costs, and that this in turn diminishes the demand for labor within the industrial sectors of the advanced market economies.[59]

The alternative school, while not denying that trade has played a role in deindustrialization, sees the principal causes as residing in domestic sources.[60] Among these are changing preference patterns away from manufactured goods and towards services, high productivity growth in the face of inelastic demand, as well as the associated changes in investment in new productive capacity.[61] North-South trade accounts for at most one-sixth of the loss in manufacturing employment in these studies.

Furthermore, it may indeed be the case that the welfare state is itself responsible for the decline in employment in the traditional sectors. As Bacon and Eltis have argued, both the costs posed by taxation as well as the generosity of the modern welfare state, including the opportunity to work for at least equivalent if not higher wages in the public sector, have had a tremendous negative effect on industrial employment.[62] The notion of efficiency losses from distortionary taxation is in fact a quite common assumption in economic models of the welfare state,[63] and it is of course also a view that is popular with political parties and governments of a neo-liberal bent. Unlike the trade argument, however, there is little systematic empirical evidence to support the idea.

Figure 3 provides some descriptive evidence on the question of whether trade causes deindustrialization. It plots the loss of employment in the traditional sectors from 1962 through 1991 against the average trade openness for the same period. There is little hint of any relationship. Indeed the correlation between the two series is about 0.17.

Figure 3. Trade Openness and Losses in Traditional Sectors
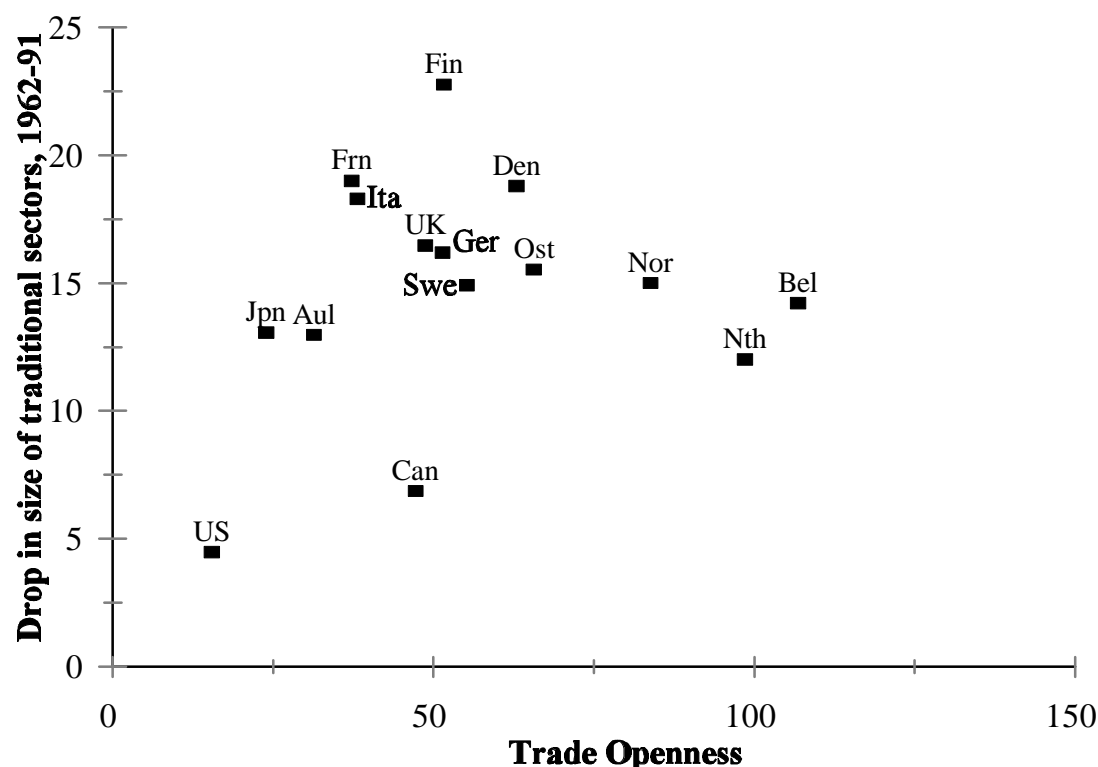
Alternatively, if one were to adopt the hypothesis that deindustrialization has more to do with internal processes, processes of productivity gain and shifting tastes, then one would expect that a process of convergence has been underway. Thus, early industrializers which had pretty much gone through this transformation by the beginning of this period would have suffered the least loss of employment in the traditional sectors, while late industrializers would have experienced more rapid decline. As Figure 4 demonstrates, there seems to be a fair amount of support for this position. The correlation between employment intensity in the traditional sectors in the year 1962 and the loss of employment in these sectors over the three succeeding decades is about .85. Thus, the United States, which had the smallest traditional sectors (about twenty four percent), experienced the smallest loss (less than five percent), while Finland, lagging well behind the United States and having nearly fifty percent of its working age population engaged in the

traditional sectors, experienced the largest loss in the sample of fifteen countries, well over twenty percent.

Figure 4. Initial Size and Losses in Traditional Sectors
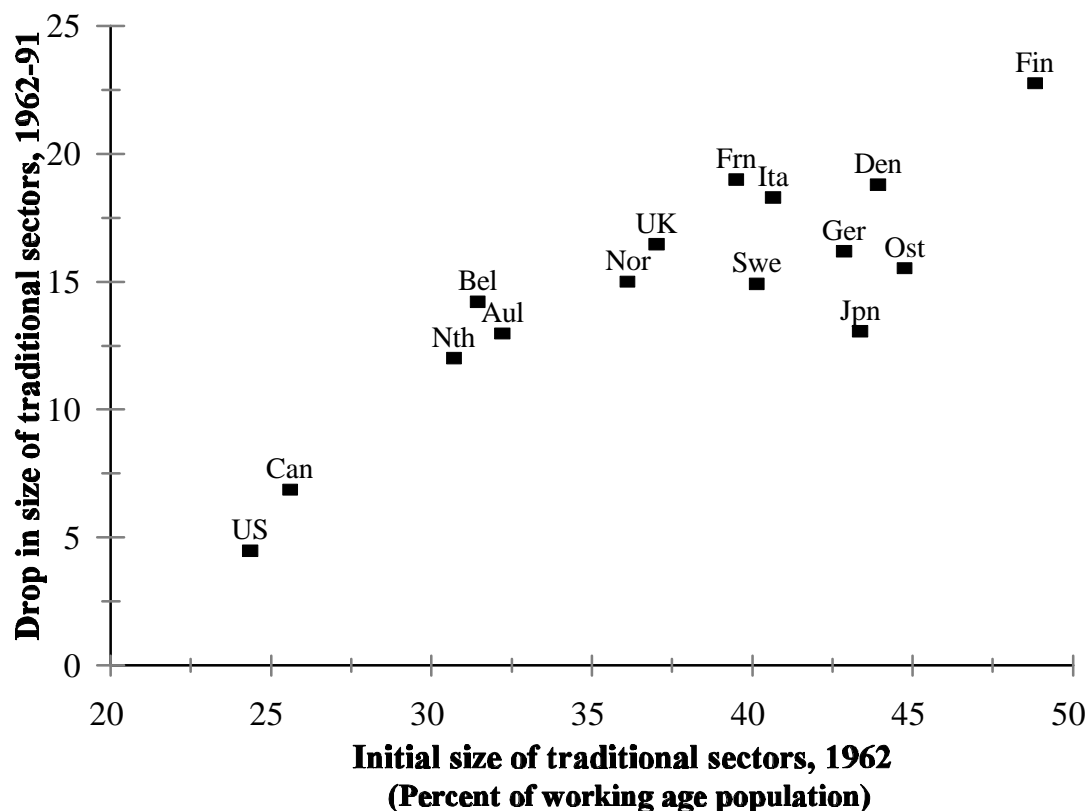
But descriptive, and indirect, evidence of this nature can sometimes be misleading. We have therefore estimated a pooled cross-section time-series model which uses the change in the log of the number of people employed in manufacturing and agriculture as a share of the working age population as the dependent variable (see Table 4).[64] This is a standard setup in the existing literature except that we have included agricultural employment on the left-hand side to make the results speak directly to our deindustrialization variable. However, the results are very similar if

we focus exclusively on manufacturing employment. The analysis includes 14 OECD countries for which we have complete data in the period from 1964 through 1990.[65]

For presentational ease Table 4 divides the independent variables in a group of "domestic" variables, and a group of "international" variables. Following the existing economic literature we include among the domestic-structural variables, (i) a measure of productivity growth, (ii) the log of income per capita and the square of this variable to capture changing consumption preferences, (iii) the growth in per capita income as a measure of demand effects, (iv) gross capital formation as a share of GDP, and (v) the two spending variables. For the exogenous variables we have included (vi) the balance of trade with OECD, with OPEC and with less developed countries (LDCs), and (vii) the capital market openness variable used above.

The productivity measure is meant to capture the tendency for firms to shed workers as productivity increases. Note that there is some theoretical ambiguity with respect to the impact of this variable. While faster productivity growth makes goods relatively cheaper, and therefore boosts demand, less labor is required to produce the same amount of output. The net effect on employment depends on the price and income elasticity of demand, as well as on real wage changes. Research, however, has shown that the labor saving effect tends to dominate the demand effect in the period of interest[66]. For the income terms, the expectation is that the parameter on the first term will be positive while that on the second term is negative, signifying that as income passes beyond a certain level, the relative demand for goods in both the agricultural and manufacturing sectors will begin to decline. The effects of capital formation and growth in income are expected to be positive since both will boost production and demand for labor.[67]

The results are generally very supportive of our argument. Deindustrialization is almost exclusively driven by domestic factors *other* than the welfare state. Technological progress, demand conditions, and shifting consumption patterns are what cause employment in industry and agriculture to decline. There is no evidence that government spending has "crowded out"

Table 4. Regression Results for Industrialization (t-scores in parentheses).

Endogenous variables		Exogenous variables	
[Lagged level]	-0.113***	Capital openness	0.001
	(-5.27)		(0.30)
Productivity growth	-0.353***	Δ Capital openness	0.001
	(9.09)		(0.50)
Income	0.523**	OECD trade balance	0.002***
	(2.18)		(3.47)
Income squared	-0.30**	Δ OECD trade balance	0.004***
	(2.24)		(4.43)
Growth in income	0.585***	OPEC trade balance	-0.004*
	(8.50)		(-1.96)
Capital formation	0.032***	Δ OPEC trade balance	-0.003
	(5.53)		(-1.35)
Government Transfers	-0.001	LDC trade balance	-0.003**
	(-0.99)		(-2.12)
Government Consumption	0.001	Δ LDC trade balance	-0.002
	(0.30)		(-1.19)
Increase in explained var.	35%		5%
Adjusted R-Squared			0.52
Number of observations	378		378

Significance levels: * < 0.10; ** < 0.05; *** < 0.01

Notes: The increase in explained variance is the change in R-squared when the set of endogenous and exogenous variables are added to a model where these variables are excluded. The results for country dummies are not shown.

employment in the traditional sectors; every indication is that the causal arrow goes in the opposite direction. Nor does trade appear to be an important source of deindustrialization. A negative trade balance with other industrialized countries (and the first difference in that trade balance) *does* hurt industrial employment, but the effect is substantively small and cannot have been a major cause of deindustrialization across the OECD area for the simple reason that intra-OECD trade is relatively balanced over time.

The crucial question with respect to trade is whether growing trade with less developed countries has priced out a substantial number of workers in agriculture and industry in the advanced countries. We find no evidence to that effect. The coefficients on the lagged levels of the trade balances with OPEC countries and with Third World countries are both negative and statistically significant, while both of the coefficients on the first differences are statistically insignificant. Note, that these results, which suggest that positive trade balances with the OPEC and Third World countries *lower* employment while negative balances promote employment, are not the consequence of multicollinearity. Nor do their effects change in substantive terms when we use alternative specifications of the model. We have run a large number regressions using a variety of combinations of trade balances and import penetration measures, and the results are *all* contrary to the "trade leads to deindustrialization" hypothesis. In fact, the results in Table 4 are the strongest we have been able to produce in *support* of the popular perception.[68] The same is the case for the capital market openness variable which consistently fails to produce effects that are statistically distinguishable from zero.

Though surprising given popular views, our results essentially replicates those in an OECD study by Rowthorn and Ramaswamy,[69] even though our data and model specification are somewhat different. Like Rowthorn and Ramaswamy we find that deindustrialization is driven primarily by deep economic processes that are unrelated to either openness or spending. Productivity growth in the traditional sectors leads to a loss in employment, whereas rising demand through growing investment or incomes have a positive effect. Consistent with Engel's law, the results also indicate that demand for agricultural and manufacturing first rises with income and then falls at higher levels, thereby eventually diminishing the level of traditional employment. We conclude form this analysis our argument and results for spending are robust to both the charge that deindustrialization is a mediating variable, and to the charge that its association with spending is a result of reversed causality.

Conclusion

The domestic effects of the international economy has been increasingly emphasized in political-economic theory as well as popular accounts. While there is no denying that international trade and financial liberalization have heightened interdependence among states and played an ever more important role in shaping public policy, the causal primacy of these factors in shaping the dimensions of the welfare state appears to be greatly exaggerated.

A concomitant aspect of this exaggeration of global factors is the neglect of domestic forces of change -- forces of change that are driven by technological advance and shifting demand patterns. These forces have caused massive shifts in the employment structure, the most notable being the shift from manufacturing to services. Because people often lack skills that travel well between these sectors, deindustrialization poses significant risks to those workers who are threatened by displacement. Given that employer-provided social insurance is limited by firm or by industry, these risks can only be addressed through government expansion of social security and public employment.

Why has the role of deindustrialization been ignored in explanations of welfare state expansion? We suspect that one reason is a misconception that the shift in the employment structures is relatively uniform across countries, a common mistake in political science.[70] As we document in the introduction to this paper, there is in fact tremendous variation in the extent of deindustrialization, and our empirical results demonstrate that this factor can account for very significant proportion of the variance in welfare state spending. Another reason for the omission is undoubtedly an outgrowth of the idea, deeply ingrained in most of our theories of comparative political economy, that the rise of the welfare state is linked to strength of the industrial working class. What our analysis suggests is that *any* major transformation in the employment structure, whether from agriculture to industry or from industry to services, produces insecurities in the labor market which propel demands for state intervention.

Governments of all political stripes have responded to these demands by expanding transfer payments and social service provision. Nevertheless, partisanship continues to be important in the redistributive aspects of the welfare state. This shows up clearly in the results for public consumption, which has expanded much more rapidly in countries where the left is strong. We would conjecture that the same is true for transfer payments if we look at the composition, rather than the level, of spending.

In fact, there are reasons to expect that deindustrialization will be associated with increasingly distinct partisan effects. First, due to gaps in productivity growth across sectors, egalitarian policies tend to inhibit the expansion of private service sector employment, which present the government with an increasingly clear choice between either excluding more and more people from the labor market, or employing more of them in public service sector jobs. Second, with the process of sectoral transformation coming to an end in many countries, the political support for further welfare state expansion is likely to wane, whereas distributive conflicts over existing welfare state programs are likely to intensify. We believe that these political aspects of deindustrialization are promising areas for future research.

Appendix A: Variable definitions and data sources

This appendix provides the exact definitions and data sources for the variables included in the statistical analyses.

Government transfers. All government payments to the civilian household sector, including social security transfers, government grants, public employee pensions, and transfers to non-profit institutions serving the household sector. Sources: Cusack[71] and the OECD.[72]

Government consumption. Total government consumption of goods and services net of military spending as a percentage of GDP. Sources: Cusack,[73] OECD,[74] and SIPRI.[75]

Deindustrialization. 100 minus the sum of manufacturing and agricultural employment as a percentage of the working age population. Source: OECD.[76]

Trade openness: Total exports and imports of goods and services as percentage of GDP. Source: OECD.[77]

Capital market openness. The index measures the extent to which capital markets are liberalized, and is presented in Quinn and Inclan.[78]

Left government center of gravity. This is an index of the partisan left-right "center of gravity" developed by Cusack.[79] It is based on (i) Castles and Mair's codings of government parties' placement on a left-right scale,[80] weighted by (ii) their decimal share of cabinet portfolios. The index varies from 0 (extreme right) to 4 (extreme left), although most observations are much closer to the mean.

Electoral participation. Based on voter turnout rates as recorded on an annual basis in Mackie and Rose,[81] the *European Journal of Political Research*., and in International Institute for Democracy and Electoral Assistance.[82]

Unexpected growth. Real GDP per capita growth at time t minus average real per capita growth in the preceding three years. The variable is defined in accordance with Roubini and Sachs.[83] Source: OECD.[84]

Income. Gross domestic product per capita in 1985 US dollars purchasing power equivalents. Source: Penn World Tables.[85]

Productivity growth. Annual rate of change in real value added per worker in industry and agriculture. Source: OECD.[86]

Trade Balances. Merchandise trade balance expressed as a percent of GDP for three country groupings (OECD, OPEC, Third Word). Source: IMF.[87]

Strength of labor. Measured as the product of union density and centralization. The density data is from Visser,[88] while the centralization data is from Iversen.[89]

Capital formation: Gross capital formation as a percent of GDP. Source: Penn World Tables.[90]

$$Automatic\ transfers\ =\ replacement\ rate\,(t-1)\cdot\Delta\frac{unemployed\ +\ population{>}65}{population}\,(t),$$

where the replacement rate is the percentage share of transfers in GDP relative to the percentage share of the dependent population in the total population at time *t-1*. Source: OECD,[91] and transfer data.

$$Automatic\ consumption\ =\ \frac{gov\ consumption}{GDP}(t-1)\cdot\left(\frac{\Delta\ gov\ deflator(t)}{gov\ deflator(t-1)}\right)\bigg/\left(\frac{\Delta GDP\ deflator(t)}{GDP\ deflator(t-1)}\right),$$

where *gov deflator* is the price deflator for government services, and *GDP deflator* is the price deflator for the whole GDP.

Private sector labor surplus. Deindustrialization minus the private service sector employment as percent of the working age population (change in this variable when used as dependent variable).

Excluded labor. 100 minus all employed people as a percent of the total population (change in this variable when used as dependent variable).

Generosity of transfers. The percentage share of transfers in GDP relative to the percentage share of the non-working population in the total population (change in this variable when used as dependent variable). Source: OECD,[92] and transfer data

NOTES

1. See David Cameron, "The Expansion of the Public Economy: A Comparative Analysis," *American Political Science Review* 72 (1978) and Peter Katzenstein, *Small States in World Markets* (Ithaca: Cornell University Press, 1985).

2. Dani Rodrik, "Why Do More Open Economies Have Larger Governments," *Journal of Political Economy* 106, no. 5 (October, 1998).

3. See Geoffrey Garrett, "Capital Mobility, Trade and the Domestic Politics of Economic Policy." *International Organization* 49, no. 4 (1995), and Geoffrey Garrett, *Partisan Politics in the Global Economy* (Cambridge: Cambridge University Press, 1998).

4. Hans-Peter Blossfeld, "Is the German Dual System a Model for a Modern Vocational Training System?" *International Journal of Comparative Sociology* 33, nos. 3-4 (1993).

5. Martin Kohli, Martin Rein, Anne-Marie Guillemard, and Herman van Gunsteren, eds., *Time for Retirement: Comparative Studies of Early Exit from the Labor Force* (Cambridge: Cambridge University Press, 1992).

6. Gøsta Esping-Andersen, *The Three Worlds of Welfare Capitalism* (Princeton: Princeton University Press, 1990).

7. See also Torben Iversen and Anne Wren, "Equality, Employment, and Budgetary Restraint: The Trilemma of the Service Economy," *World Politics* 50 (July 1998).

8. Rodrik (fn. 2), p. 13.

9. Garrett, *Partisan Politics* (fn. 3), p. 7.

10. Cameron (fn. 1); John G. Ruggie, "International Regimes, Transactions and Change: Embedded Liberalism in the Postwar Economic Order," in Stephen D. Krasner, ed., *International Regimes* (Ithaca: Cornell Univerity Press, 1983); Katzenstein (fn. 1).

11. See Fritz Scharpf, *Crisis and Choice in European Social Democracy* (Ithaca: Cornell University Press, 1991); Paulette Kurzer, *Business and Banking* (Ithaca: Cornell University Press, 1993).

12. See Dani Rodrik, *Has Globalization Gone Too Far*? (Washington DC: Institute for International Economics, 1997, ch. 3).

13. Rodrik (fn. 2).

14. The government sector *is* less volatile, but it does not make sense to include it in the comparison since this sector is supposed to be growing as a *consequence* of high volatility in the exposed sectors.

15. This constraint could come at both on the spending and revenue side. Thus, there is broad consensus that capital market integration has raised the price of running deficits, while others (including Rodrik) have argued that it has made taxation of capital more difficult. The latter argument, however, is disputed by Duane Swank who finds no evidence that business taxation has become less important for revenue generation. See Duane Swank, "Funding the Welfare State: Globalization and the Taxation of Business in Advanced Market Economies," *Comparative Political Studies* 46, no. 4 (September, 1998).

16. Katzenstein (fn. 1).

17. Cameron (fn. 1).

18. Rodrik (fn. 2 and fn. 12).

19. Indeed, trade openness may be more salient for less developed countries because trade in many of these countries, unlike trade between OECD countries, has led to heavy dependence on a few primary commodities which are subject to high international price volatility.

20. Garrett (fn. 3).

21. Our thanks to Geoffrey Garrett for generously providing us with the data he used in his analyses, thereby allowing us to replicate his findings. Note that Garrett uses levels of spending on the left-hand-side, but this formulation gives an exaggerated estimate for R-squared since the lagged dependent variable will pick up most of the cross-national variance. Using changes in spending on the left-hand-side avoids this problem while leaving the estimated coefficients the same. (In mathematical terms, we are simply subtracting the lagged dependent level variable on both sides of the equal sign, which obviously leaves the coefficients for all other variables unchanged.)

22. Garrett (fn. 3, 1998), p. 80; Nouriel Roubini, and Jeffrey D. Sachs, "Political and Economic Determinants of Budget Deficits in the Industrial Democracies," *European Economic Review* 33 (1998).

23. See Thomas Cusack, "Partisan Politics and Public Finance: Changes in Public Spending in the Industrialized Democracies, 1955-1989," *Public Choice* 91 (1997); and Thomas Cusack, "Partisan Politics and Fiscal Policy," *Comparative Political Studies* 32, no. 4 (January, 1999).

24. Ibid.

25. Cusack (fn. 23, 1997).

26. For recent examples see Cusack (fn. 23), Alexander Hicks and Duane Swank, "Politics, Institutions, and Welfare Spending in Industrialized Democracies, 1960-82," *American Political Science Review* 86, no. 3 (September 1992), and Evelyn Huber, Charles Ragin and John Stephens, "Social Democracy, Christian Democracy, Constitutional Structure and the Welfare

State." *American Journal of Sociology* 99, no 3 (1993).

27. Gøsta Esping-Andersen, *Markets Against Politics. The Social Democratic Road to Power*. (Princeton: Princeton University Press, 1985); Esping-Andersen (fn. 6).

28. Walter Korpi, *The Working Class in Welfare Capitalism: Work, Unions and Politics in Sweden* (London: Routledge and Kegan Paul, 1978); Walter Korpi, *The Democratic Class Struggle* (London: Routledge and Kegan Paul, 1983).

29. John D. Stephens, *The Transition from Capitalism to Socialism* (London: Macmillan Press Ltd, 1979).

30. See, for example, Cathie Jo Martin, "Nature or Nurture? Sources of Firm Preference for National Health Reform," *American Political Science Review* 89 (December 1995); Peter Swenson, "Arranged Alliance: Business Interests in the New Deal," *Politics & Society* 25 (1997); and Isabela Mares, "Negotiated Risks: Employers' Role in Social Policy Development," (unpublished Ph. D. Dissertation, Harvard University, 1998).

31. Harold L. Wilensky, The Welfare State and Equality (Berkeley: University of California Press, 1975).

32. Peter Flora and Jens Alber, "Modernization, Democratization, and the Development of Welfare States in Europe," in Peter Flora and Arnold Heidenheimer, eds., The Development of Welfare States in Europe and America (London: Transaction Books, 1981).

33. See Flora and Alber (fn. 32), p. 41.

34. See Wilensky (fn. 31) p. 47.

35. Garrett (fn. 3).

36. The attraction of the median voter depends on the electoral system. In two-party systems the mechanism is vote maximization which leads to centrist appeals. See Anthony Downs, *An Economic Theory of Democracy* (New York: Harper and Row, 1957), chaps 7-8; and Gary W. Cox, "Centripetal and Centrifugal Incentives in Electoral Systems," *American Journal of Political Science* 34 (1990). In multi-party systems the mechanism is office maximization, which makes appeal to the median voter important for inclusion in governing coalitions. See Michael Laver and Norman Schofield, *Multiparty Government. The Politics of Coalition in Europe* (Oxford: Oxford University Press, 1991).

37. Alan Meltzer, and Scott Richard, "A Rational Theory of the Size of the Government," *Journal of Political Economy* 8, no. 9 (1981). See also Hicks and Swank (fn. 26).

38. Arend Lijphart, "Unequal Participation: Democracy's Unresolved Dilemma - Presidential Address," *American Political Science Review* 91 (1997).

39. Esping-Andersen (fn. 6).

40. See Gøsta Esping-Andersen, *Changing Classes: Stratification and Mobility in Postindustrial Societies* (London: Sage, 1993); Gøsta Esping-Andersen, *Social Foundations of Postindustrial Societies* (Oxford: Oxford University Press) ; Iversen and Wren (fn. 7); and Andrew Glyn, "Low Pay and the Volume of Work". Typescript, Corpus Christi College, Oxford (1997).

41. See Nathaniel Beck and Jonathan N. Katz, "Nuisance vs. Substance: Specifying and Estimating Time-Series-Cross-Section Models," in John R. Freeman (ed.), *Political Analysis*, Vol. 6 (Ann Arbor: University of Michigan 1996), p. 11.

42. The reason is that in the model using levels of spending on the left-hand-side, much of the variance will be accounted for by the lagged dependent variable, showing simply that current spending depends on past spending.

43. See Nathaniel Beck, "Comparing Dynamic Specifications: The Case of Presidential Approval," in James Stimson (ed.), *Political Analysis* (Ann Arbor: University of Michigan Press, 1992).

44. This does not *have* to be the case. One of the control variables, unexpected GDP growth, can in principle rise indefinitely.

45. An F-test indicates that the country dummies belong in the model.

46. Nathaniel Beck and Jonathan N. Katz, "What to Do (and Not to Do) with Time-Series-Cross-Section Data," *American Political Science Review* 89 (1995).

47. Specifically, we used Welsh´s "bounded-influence technique" which weights individual cases if they exceed a size adjusted cut-off point. Roy E. Welch, "Regression Sensitivity Analysis and Bounded-Influence Estimation," in Jan Kmenta and James B. Ramsey (eds.), *Evaluation of Econometric Models* (New York: Academic Press 1980), pp. 164-166. See also J. Fox, *Regression Diagnostics*. (London: Sage Publications 1991), p. 31.

48. Andrian Wood, *North-South Trade, Employment and Inequality: Changing Fortunes in a Skill-Driven World* (Oxford: Oxford University Press, 1994); Edward E. Leamer, *Sources of International Comparative Advantage: Theory and Evidence* (Cambridge: MIT Press, 1984); Edward E. Leamer, "A Trade Economists View of U.S. Wages and 'Globalization" (Paper presented at the Political Economy of European Integration Study Group Meeting, University of California at Berkeley, January 1996).

49. Rodrik (fn. 2), chap. 4.

50. Paul Pierson, *Dismantling the Welfare State: Reagan, Thatcher and the Politics of Retrenchment* (New York: Cambridge University Press, 1994); Paul Pierson, "The New Politics of the Welfare State," *World Politics* 48, no. 2 (1996).

51. Esping-Andersen (fn. 6), p. 115.

52. Ibid.; Iversen and Wren (fn. 7)

53. A typical left government is defined here as one that is one standard deviation to the left of the mean on the partisan government variable. A typical right government is defined similarly.

54. See Eileen Appelbaum and Ronald Schettkat, "Employment and Productivity in Industrialized Countries," *International Labor Review*, 134, nos. 4-5 (1995), and Iversen and Wren (fn. 7).

55. Robert Rowthorn, "Corporatism and Labour Market Performance " in Jukka Pekkarinen, Matti Pohjola, and Bob Rowthorn, eds., *Social Corporatism* (Oxford: Clarendon Press, 1992); Michael Wallerstein, "Wage-Setting Institutions and Pay Inequality in Advanced Industrial Societies," *American Journal of Political Science* 43, no. 3 (July 1999); and David Rueda and Jonas Pontusson, "Wage Inequality and Varieties of Capitalism," Institute for European Studies Working Paper.

56. Both figures are slightly exaggerated because there are small negative *indirect* effects of deindustrialization (through growth and other variables) which reduce the net impact of deindustrialization. Yet these indirect effects do not affect the *gap* in the effect of deindustrialization between countries with centralized and decentralized bargaining structures, which is what is of interest here.

57. See, for example, Wood (fn. 48), Steven S. Saeger, Globalization and Economic Structure in the OECD (Unpublished Ph.D. dissertation, Harvard University, 1996), and Steven S. Saeger, "Globalization and Deindustrialization: Myth and Reality in the OECD," Weltwirtschaftliches Archiv 133, no. 4 (1997).

58. Saeger (fn.57, 1997), p. 604.

59. Wolfgang Streeck, "German Capitalism: Does it Exist ? Can it Survive?" in Colin Crouch and Wolfgang Streeck, eds., *Political Economy and Modern Capitalism: Mapping Convergence and Diversity* (London: Sage, 1997).

60. Robert Rowthorn, and Ramana Ramaswamy, "Deindustrialization: Causes and Implications" (Washington: International Monetary Fund, Working Paper 42, 1997); Robert Rowthorn, and Ramana Ramaswamy, "Growth, Trade, and Deindustrialization," *International Monetary Fund Staff Papers* 46, no. 1, (March 1999), and Paul Krugman, *Pop Internationalism* (Cambridge: MIT Press, 1996).

61. Rowthorn and Ramaswamy (fn. 60, 1999), p. 19.

62. Robert Bacon and Walter Eltis, *Britain´s Economic Problem: Too Few Producers* (London: Macmillan Press, 1976).

63. See, for example, Meltzer and Richard (fn. 37), and Alberto Alesina, and Roberto Perotti, "The Welfare State and Competitiveness," *American Economic Review* 87, no. 5 (December 1997).

64. As in the previous analysis, problems of heteroskedasticity led us to employ Beck and Katz´s (fn. 46) method for deriving panel corrected standard errors.

65. The countries include: Austria, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, Netherlands, Norway, Sweden, the United Kingdom, and the United States. Missing data problems precluded adding Switzerland. The time frame is the maximum possible given the availability of data.

66. See Appelbaum and Schettkat (fn. 54), and Eileen Appelbaum and Ronald Schettkat, "The End of Full Employment? On Economic Development in Industrialized Countries," *Intereconomics* (1994).

67. Investment is measured as a percentage share of GDP. It is taken from the Robert Summers and Alan Heston, Penn World Tables, Version 5.5, Data file. (Cambridge, MA: National Bureau of Economic Research, 1993).

68. The results of alternative specifications are available from the authors upon request.

69. Rowthorn and Ramaswamy (fn. 60, 1999).

70. Jonas Pontusson, "Explaining the Decline of European Social Democracy: The Role of Structural Economic Change." *World Politics* 47 (July, 1995).

71. Thomas Cusack, "The Changing Contours of Government." WZB Discussion Paper (1991).

72. OECD, *National Accounts, Part II: Detailed Tables* (Paris: OECD, various years).

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89. Torben Iversen, "Wage Bargaining, Central Bank Independence and the Real Effects of Money," *International Organization* 52 (summer 1998).

90. Penn World Tables (fn. 67).

91. OECD, *Labour Force Statistics* (Paris: OECD, various years).

92. Ibid.