Birds of a Different Feather?

Varieties of Capitalism, Factor Specificity, and Interindustry Labor Movements

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Abstract

We present new cross-national evidence on labor mobility, examining rates of interindustry labor movement in the manufacturing sectors of the OECD economies between 1970 and 1992. We find very little support for the current distinctions being made between coordinated and liberal economies in the extant literature on "varieties of capitalism." On average, rates of interindustry labor movement actually tend to be higher in "coordinated" economies than they are in "liberal" economies, and these rates vary across nations within each classification as much as they vary across nations in different categories. Labor does appear to be more mobile between manufacturing industries where there is more spending on social security transfers that can help insure workers against the risks of investing in specific skills, even when controlling for a range of structural and business-cycle effects. But other variables also have important effects. Spending on active labor market programs that subsidize the retraining and relocation of workers has a positive impact on interindustry labor mobility. And more technologically advanced economies tend to have lower levels of labor mobility, all else constant, suggesting that the newest manufacturing technologies have tended to involve more intensive use of highly specific skills and equipment.

I. Introduction

The specificity of productive factors to particular types of economic activities has long been a central concern for economists interested in the income effects of trade and trade policies. Depending upon whether factors are assumed to be highly specific to different types of production or highly mobile between them, general equilibrium models generate very different predictions about the distributional implications of increased trade (or indeed any change in policy that affects relative commodity prices). Factor specificity is thus regarded as crucial for understanding the political-economic origins of a wide range of trade and industrial policies, since the motivations of economic actors who enter the political arena to influence such policies will be shaped by their ability to shift assets between industries (Grossman and Levinsohn 1989).

More recently factor specificity has also assumed a crucial role in research that examines a broader range of economic policies and institutions in the advanced industrial nations. New work on the "varieties of capitalism" has focused on complementarities between the various regulations and institutions that govern markets for labor and capital in these nations and different types of policies adopted in areas such as social welfare and education (Hall and Soskice 2001). According to this advocates of this approach, the advanced economies tend to cluster into two very distinct equilibrium types. At one end of the spectrum are "coordinated market economies" in which regulations and institutions in markets for labor and capital encourage longer-term relationships between economic actors, less mobility, and heavier investments by workers and firms in specific types of physical and human capital. At the other extreme are "liberal market economies" in which regulations and institutions assure that factor markets are highly competitive and fluid, and there is less investment by workers and firms in specific assets and more emphasis on assets that can be readily adapted to alternative uses. Factor specificity is thus treated as a key defining characteristic of each type of economy, shaping the preferences of workers and firms

over major policy dimensions — including the size of the welfare state —and determining how (and how rapidly) each economy adjusts to exogenous shifts in world markets and technology by reallocating productive inputs between industries.

Given the analytical importance attached to levels of factor specificity in these different fields it is vexing, as Grossman and Levinsohn (1989) have pointed out, that very few attempts have actually been made to assess factor specificity empirically, and there has been almost no study of how it differs across countries. For the most part the "varieties of capitalism" literature relies upon a set of stylized facts about the ways in which different labor and financial-market regulations and institutions affect factor specificity by making it more costly for firms to fire employees, for instance, or by sponsoring vocational training for workers. In this paper we present new cross-national evidence on labor mobility, examining rates of interindustry labor movement in the manufacturing sectors of the OECD economies between 1970 and 1992. We find very little support for the current distinctions being made between coordinated and liberal economies in the extant literature. On average, rates of interindustry labor movement actually tend to be higher in "coordinated" economies than they are in "liberal" economies, and these rates vary across nations within each classification as much as they vary across nations in different categories. Labor does appear to be more mobile between manufacturing industries where there is more spending on social security transfers that can help insure workers against the risks of investing in specific skills, even when controlling for a range of structural and business-cycle effects. This fits with arguments in the extant literature. But other variables also have a significant impact on levels of labor specificity. Spending on active labor market programs that subsidize the retraining and relocation of workers has a clear positive effect on interindustry labor mobility. And more technologically advanced economies tend to have higher levels of labor specificity, all else constant, suggesting that the newest manufacturing technologies have tended to involve more intensive use of specific skills and equipment.

II. Factor Specificity, Mobility, and Varieties of Capitalism

a. The Theoretical Importance of Factor Specificity

Virtually all discussions of the importance of factor specificity in the economics literature can be traced to the famous Stolper-Samuelson theorem (1941) which assumes that factors of production are highly movable or mobile between industries — as a consequence all owners of the same factor (e.g., workers) are affected in the same way by exogenous changes in relative goods prices, no matter where they are employed in the economy. Alternative general equilibrium models (often referred to as Ricardo-Viner models) that instead assume factors are highly immobile or "specific" to particular industries generate very different results — real returns to specific factors are tied closely to the fortunes of the industries in which they are employed or invested (Jones 1971; Mussa 1974).[1] Obviously the Stolper-Samuelson and Ricardo-Viner models examine extreme, or polar, cases in which factors are either perfectly mobile or specific. But specificity can be regarded more generally as a continuous variable, reflecting the costs of moving labor and capital between industries, affected by technological changes in methods of production (which affect the specialization of human skills and physical assets for use in particular industries) and by changes in regulations and policies that restrict or subsidize interindustry factor movement.[2] Much recent debate in the literature on the political economy of trade has centered on the degree to which capital and labor are specific in use and how this shapes

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[1] The original model was introduced independently by Jones (1971) and Samuelson (1971): the former christened it the "specific factors" model, while the latter named it the "Ricardo-Viner" model.

[2] This is best represented formally as the elasticity of substitution along the transformation curve that maps the conversion of a factor located in one industry for use in another at increasing opportunity costs; see Hill and Mendez 1983; Hiscox 2002b. Note that while it might be worthwhile to distinguish between factor *specificity* defined in only terms of the technological adaptability of human and physical capital to different tasks, allowing *mobility* to be a broader concept that takes into account other costs associated with moving assets between different economic activities (e.g., due to geographic relocation, job search, loss of benefits), in practice specificity has been used simply as the converse of mobility.

lobbying and thus the formulation of trade policies (Magee 1980; Rogowski 1989; Frieden 1991; Irwin 1995; Alt et al 1996; Hiscox 2001a, 2002b).

An important new body of work in comparative political economy also gives factor specificity a theoretical pride of place (Hall and Soskice 2001). This "varieties of capitalism" (VoC) perspective neatly brings together insights on complementarities between different policies and institutions governing the relationships between economic agents in markets for products, labor, and capital. Regulations that limit firms from firing workers during recessions, for instance, are more feasible if the financial system does not tie firm credit so closely to short-term profitability (Hall and Soskice 2001, 18). That certain combinations of regulations and institutions may work more efficiently than others suggests that, in equilibrium, nations will be drawn towards these combinations. Indeed, proponents of the VoC approach argue that the advanced economies tend to cluster into two distinct types: *liberal market economies* (LMEs) and *coordinated market economies* (CMEs). In LME's — identified as Australia, Britain, Canada, Ireland, New Zealand, and the United States — economic activities are governed largely by competitive market forces and relationships between actors are characterized by the arms-length exchange of goods or services. In CME's — Austria, Belgium, Denmark, Finland, Germany, Japan, the Netherlands, Norway, Sweden, and Switzerland — activities are coordinated more by relational contracting between firms and other actors engaged in long-term collaborative agreements.[3]

Hall and Soskice (2001, 17) argue explicitly that firms and workers in CMEs "should be more willing to invest in 'specific and co-specific' assets (assets that cannot readily be turned to another purpose and assets whose returns depend heavily on the active cooperation of others), while those in LMEs invest more extensively in 'switchable' assets (assets whose value can be realized if diverted to other purposes)." Indeed, the distinction is thought to be so clear that

[3] France and Italy (along with Greece, Portugal, Spain, and Turkey) are classified as ambiguous cases.

Iversen and Soskice (2001a), in related work, have actually preferred to simply categorize CMEs and LMEs as, respectively, "specific asset" and "general asset" economies. They claim it is "not simply industry interests and industrial policies that are affected by the asset specificity of investment. Mass politics and virtually every economic and political institution shape, and are shaped by, the nature of asset investments" (Iversen and Soskice 2001a, 1).

While factor specificity is obviously assigned a critical analytical role in the VoC approach, it is not altogether clear whether specificity is regarded as exogenous or endogenous with respect to regulations and institutions. Hall and Soskice (2001, 17) depict specificity in part as a product of the institutional environment. They argue that firms and workers in CMEs are given more institutional support for investing in specific assets, in the form of industry-based vocational training and collaborative research and development programs for instance, while economic actors in LMEs are given more institutional freedom to move assets between alternative uses and are thus encouraged to acquire more adaptable types of skills and technologies. The relative organizational strength of trade unions and employer associations in CMEs is key since it makes cooperation, in the management of apprenticeship programs, for instance, and wage bargaining, much more feasible than in LMEs (Hall and Gingerich 2001, 4-5). For Estevez-Abe, Iversen, and Soskice (1999) and Iversen and Soskice (2001a), the specificity of labor skills is regarded as being mutually, simultaneously determined with policies that provide for "social protection" (e.g., employment protection regulations, unemployment benefits, wage guarantees). In their account, firms and workers in CME economies negotiate a bargain in which firms support various forms of social protections so that workers will be willing to invest in the acquisition of specific skills that boost productivity.

On the other hand, factor specificity also seems to be assigned some exogenous component that feeds back into the determination of institutions and regulations. Hall and Soskice (2001, 22) write that since "firms in coordinated market economies employ production strategies that rely on a highly-skilled labor force" they need industrial relations institutions capable of

resolving the problems that often hinder skill acquisition. Their logic here is rooted in the notion that firms in different economies have different innate "core competencies or dynamic capabilities" that affect the types of production they choose (Hall and Soskice 2001, 6). Estevez-Abe, Iversen, and Soskice (1999) make the explicit assumption that firms in CME economies are wedded to "production strategies" requiring high levels of specific skills. This is quite a major departure from standard general equilibrium models — rather than assuming that firms make production decisions based upon given factor endowments (and hence, factor costs), the authors assume that firms take their production decisions as given and try to change public policy to alter factor endowments in favorable ways. The assumptions about production strategies and core competencies seem to be standing in for assumptions about past levels of factor specificity but in a manner that is not at all clear.[4]

There are other theoretical problems with the treatment of specificity, and its origins, in the VoC studies. Why assume that that the risks involved in investments in specific assets automatically deter such investments if expected returns rise with risk? It may well be that in more market-based economies, like the United States, the risks of owning specific assets tend to be assumed almost completely by individual workers and firms anticipating the "rents" that will follow if such assets earn above-market rates of return in the future. In economies like Sweden, by contrast, the government has traditionally "nationalized" much of the risk associated with these types of investment by subsidizing retraining and the relocation of labor and capital for employment in growth industries, and by pursuing greater equality in wages and incomes. The potential returns to owning specific assets are reduced proportionally. In Germany, risks appear to be pooled too, but among firms and workers and in particular industries and regions. But the consequences of these differences for the total amount of investment that occurs in specific assets

[4] This seems to be what Iversen and Soskice (2001a, 3) have in mind when they argue that "particular types of asset investments, and their associated institutions, create comparative advantages that in turn raise the returns on investing in those assets and institutions." While a

are not so clear. As Frank and Cook (1999) have argued, "winner-take-all" markets in which individuals assume all the risks of investing in specific skills may actually lead to massive over-investment in such assets. [5]

These various theoretical ambiguities aside, it is clear that factor specificity has become a central part of the VoC approach to explaining the differences in the ways advanced industrial economies function. It therefore seems more pressing than ever to consider cross-national empirical evidence on levels of factor specificity.

b. Empirical Evidence on Comparative Levels of Factor Specificity

Unfortunately there has been very little empirical research to date on comparative levels of factor specificity or interindustry factor mobility. Most of the relevant empirical work has been focused on U.S. manufacturing industries. There is some indirect evidence of high levels of labor specificity in the U.S. manufacturing sector in recent years where substantial industry wage differentials among workers indicate the existence of noncompetitive rents (see Dickens and Katz 1987; Katz and Summers 1989; Krueger and Summers 1987, 1988).[6] There is more direct evidence indicating a high degree of *capital* specificity in U.S. manufacturing industries. Grossman and Levinsohn (1989) have examined stock-market returns in different industries during the 1970s and 1980s, concluding that the large effects on such returns produced by unanticipated changes in relative commodity prices are consistent with the assumption that capital is highly immobile between U.S. industries. Ramey and Shapiro (1998) have come to the same conclusion by studying secondary markets for capital equipment: they found that buyers for such

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dynamic model seems eminently reasonable, the clustering story must be given a clear starting point somewhere in time.

[5] On another tangent, the VoC approach seems to assume that financial systems that favor equities over banking as a way to mobilize credit seem to assume that the these systems will produce less accumulation in specific forms of firm assets than systems oriented more towards banks. And yet economists have long maintained that deeper equity markets, by allowing greater pooling of risks, actually encourage more investment in specific types of assets (Mussa 1974; Williamson 1987).

[6] Hiscox (2001a, 2001b) does compare industry wage (and profit) dispersion across several countries but focuses mainly on changes over time within each economy.

equipment are predominantly firms in the same industry as the seller, and that equipment is sold to firms outside the industry only at highly discounted prices. Less direct inferences about the mobility of both labor and capital have been made using evidence on the revealed policy preferences of industry lobby groups. In an often-cited study, Magee (1980) examined testimony by labor unions and management groups before the U.S. House Ways and Means Committee on the Trade Act of 1974. Finding that labor and management groups lobbied together along industry lines rather than dividing by class or factor, Magee concluded that Ricardo-Viner assumptions about high factor specificity were more appropriate for U.S. manufacturing than the Stolper-Samuelson model.

In the VoC literature, cross-national differences in levels of factor specificity have typically been inferred from data on vocational training programs or measures of rates of turnover or average tenure among employees. Iversen and Soskice (2001b) divide OECD nations into those with highly institutionalized vocational training systems (France, Italy, Germany, Norway, and Sweden) and those with poor vocational training systems (Australia, Britain, Canada, Ireland, New Zealand, and the United States). To make finer distinctions, they rely on UNESCO data on the share of workers in the 24-30 year age cohort in either secondary or post-secondary vocational training. Hall and Gingerich (2001) have applied similar comparative data on enrolments in vocational training programs. The data reflect the standard VoC contrast between Germany, where industries have developed extensive, collaborative vocational training programs for workers and educational institutions place an emphasis on acquiring vocational skills, and the United States, where individual firms typically rely on in-house training and the formal educational system places a greater emphasis on general forms of knowledge and skills.

But the data on formal vocational training programs appear to be a very incomplete guide to cross-national differences in the importance of specific labor skills. As Lynch (1994, 2) notes, it is extremely difficult to assess how skills and training vary from country to country since, although there are data on education and government programs, there is very little comparable

data on private sector activities. There is no standard approach to the measurement of firm expenditures on training across nations and the task is plagued by questions about how to account for the lower wages typically paid to workers during training periods and how to assess the indirect costs of on-the-job training in terms of lost output from trainees, co-workers, and supervisors (Mincer 1962; Lynch 1994). Recent OECD estimates of training costs do *not* show a significant difference between the expenditures of firms in the United States and firms in Germany and France (Lynch 1994, 12). In general, however, it appears that a substantial amount of informal firm-based training by U.S. firms tends to go unmeasured in studies that focus only on formal training programs (Blanchflower and Lynch 1994; Mincer 1993b). And there is an extensive literature on the growing importance of worker training in U.S. manufacturing industries during recent decades, and the related expansion in the use of fringe benefits tied to seniority as a way to encourage longer tenure among employees once they have been trained on-the-job (see Mincer 1984; Oi 1962; Block 1978; Mitchell 1982).

Data on job turnover and tenure offer another approach to measure comparative levels of labor mobility. Hall and Gingerich (2001) use OECD survey data on the percentage of employees in each economy who have held their current job for less than one year. Estevez-Abe, Iversen, and Soskice (1999) use the median tenure rates of workers in each OECD economy (the length of time surveyed workers reported being with their current employer) as their cross-national measure of labor specificity. Both types of indicators are problematic in that they reflect not just the specificity of labor skills and how this specificity affects decisions by workers to remain in their current job rather than seek an alternative, they also reflect the rate at which firms are laying off workers and thus the location of each economy in terms of the business cycle, the various regulations that affect firms propensities to layoff workers in recessions, the age and gender composition of the workforce, and differences in wages and conditions across industries which affect the incentives workers have to actually seek alternative employment. Comparing tenure

and turnover rates without controlling for all these sources of cross-national differences is not very informative in terms of labor specificity.[7]

We argue that a different type of approach to the problem, applied in a separate set of studies by economists examining the impact of trade liberalization in developing economies, holds more promise for reliably estimating levels of factor specificity across nations. This approach uses widely available data on changes in sectoral employment patterns to gauge the speed and extent of interindustry labor movement over time (e.g., Rama 1994; Currie and Harrison 1997; Harrison and Hanson 1999; Feliciano 1994; Revenga 1997; Seddon and Wacziarg 2001). Below we apply the methodology to data on employment change in the manufacturing sectors of OECD economies between 1970 and 1992 to help gauge comparative levels of labor specificity.

III. Measures of Interindustry Labor Movements

We use comparable annual data on industry employment in the advanced economies from the OECD's Structural Analysis (STAN) Database (1998). We focused on measures of the rate of change in the allocation of labor across industries in the manufacturing sector. STAN data on employment are available for 26 two-digit industries for 16 nations between 1970 and 1992. Focusing on the manufacturing sector maximizes the number of years and nations in the sample and, since manufacturing is the key tradable sector, exposed most directly to external economic shocks, it is especially important for arguments about the effects of globalization on workers and firms and the risks they face when investing in more specific forms of human and physical capital (Hall and Soskice 2001, 52-55).

[7] Comparing quit rates is more useful, though controls still need to be applied for business cycle effects, and very few OECD nations (Austria, Italy, Japan, Sweden, and the United States) actually report quit rates separately. Interestingly in was the postwar decline in quit rates in U.S. manufacturing that prompted concern among labor economists about a "new industrial feudalism" (Ross 1958) and the downward trend has continued (see Ragan 1984; Hiscox 2002a).

We constructed two basic measures of the degree of change in industry employment. The first, which we label *structural adjustment*, actually captures two types of long-term change: movements of workers between industries as well as unequal changes in aggregate employment across industries (due to workers leaving industries and finding work outside the manufacturing sector or not at all, and workers entering industries from outside manufacturing or after being unemployed). The second measure, which we label *industry reallocation*, is identical to the measure used by Seddon and Wacziarg (2001) in their study of the effects of trade liberalization in developing nations, and assesses only the movement of labor between different manufacturing industries over periods of any length. Both measures should reflect the specificity of labor to particular activities in that they will vary in line with the costs to workers of voluntarily entering and exiting different industries. But the second measure, which isolates the movement of workers between industries, is the most direct indicator of interindustry mobility.

a. Structural Adjustment in Industry Employment

Following Charette et al. (1986) and Baldwin and Gorecki (1990), we calculate a form of dissimilarity index that measures the total relative shift in employment between industries during a given number of years:[8]

$$SA_{t-z} = 0.5\sum_{i=1}^{N}\left|S_i^t - S_i^{t-z}\right| \qquad (1)$$

where S_i represents the share of total employment accounted for by the ith industry at times t and t-z years (and summation is over all N=26 manufacturing industries). The index is bounded at one end by zero (representing no change in the industrial structure) and at the other end by one (a complete shift of all employees from one subset of industries into another subset of industries). Higher values of the index indicate more rapid change in the employment distribution in the specified period.

[8] Seddon and Wacziarg (2001) also use a related measure calculated for individual industries.

Obviously choosing the length of the period to examine here is an issue. The *SA* index measures net changes in the distribution of workers over the period *t-z*; offsetting changes in the distribution of employment during the period will cancel out. We assume that short-term (i.e., annual) changes in the distribution of employment are less relevant here since they are more likely to reflect short-term business-cycle effects along with extant regulations governing dismissals, wage agreements, and levels of unemployment insurance. Studies of industrial change in individual economies typically reserve the term "structural adjustment" for long-term shifts in employment patterns, calculated for periods of 5 or more years (e.g., Charette et. al. 1986; Picot 1986; Picot and Lavallee 1986; Baldwin and Gorecki 1990). We have calculated the *SA* index over the entire 1970-1992 period and over various sub-periods as short as 3 years.

An easy way to distinguish short-term, within-period fluctuations in industry employment from the long-term, structural shifts is simply by summing the year-to-year changes in the employment distribution for *z* years prior to time *t*, and then subtracting the *SA* index calculated across the entire period as in (1) above (see Charette et. al. 1986). This measure of short-run volatility is:

$$SRV_{t-z} = \sum_{y=t-z}^{t} SA_y - SA_{t-z} \qquad (2)$$

where SA_y just represents the *SA* index calculated for each year from *t-z* to year *t*. Obviously, if the sum of these annual changes in employment distribution equals the value of *SA* calculated over the entire period we can conclude that there are no short-run movements in employment patterns at all; none of the year-to-year changes cancel each other out. By contrast, if all of the year-to-year changes cancel out — that is, they have no directional bias at all in terms of growth industries and sectors in decline — then short-run volatility will be identical to the sum of the annual changes in the distribution.[9]

[9] The OECD (1994, 15) has calculated a related measure of what they call "turbulence" in industry employment that is simply the average (rather than the sum) of the yearly *SA* indexes.

b. Industry Reallocation of Employment

The main drawback of the index of structural adjustment is that it cannot distinguish changes in the allocation of employment among manufacturing industries that are due to workers moving between jobs in different industries from changes that are due to workers moving to and from jobs in other sectors of the economy or into and out of the workforce altogether. The second measure we employ here provides a way to isolate that component of the change in the employment distribution that is due only to the movement of labor from industry to industry. Here we are following the approach used by Davis, Haltiwanger, and Shuh (1996) at the plant level and adapted by Seddon and Wacziarg (2001) to examine interindustry labor movements in developing economies. The index of industry reallocation is computed as:

$$IR_{t-z} = \frac{\sum_{i=1}^{N} \left| E_i^t - E_i^{t-z} \right| - \left| \sum_{i=1}^{N} E_i^t - \sum_{i=1}^{N} E_i^{t-z} \right|}{0.5 \sum_{i=1}^{N} \left(E_i^{t-z} + E_i^t \right)} \qquad (3)$$

where E_i is employment in the ith of the N industries at times t and t-z years. In the numerator, the term on the left represents the total number of employment changes (jobs lost and gained) across all the industries in the period. The term on the right is the total number of jobs lost or gained and not offset by a gain or loss in other industries (i.e., "uncompensated" changes in employment). Subtracting the uncompensated from the total changes in employment provides a measure of total job reallocations between industries. We divided this by a measure of total employment in manufacturing (the average across t and t-z) to obtain a measure expressed as a rate.

There are no particular problems with the choice of time periods over which to calculate the *IR* index, since most short-run effects due to layoffs and variation in unemployment levels represent uncompensated changes and are removed from the measure. We have simply calculated the *IR* index annually for each OECD nation between 1970 and 1992 and reported averages of

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But this does not allow distinctions between short and long-term shifts in employment patterns. In

those annual rates over different periods.[10] In section V below we use annual rates in pooled cross-sectional regression analysis.

IV. Cross-National Comparisons

a. Birds of a Different Feather?

The VoC approach posits a basic division between liberal market economies (LMEs), which are assumed to be dynamic and flexible and populated by workers and firms with general types of assets who can switch readily from one industry to another, and coordinated market economies (CMEs), characterized as rigid and inflexible systems in which workers and firms invest heavily in specific assets and become firmly entrenched in particular industries. Since LMEs supposedly reward flexibility, they are expected to able to adapt more quickly to new technologies and other exogenous shocks. CMEs are regarded as better suited to incremental adjustment and innovation, while LMEs are regarded as better suited to radical innovation (Hall and Soskice 2001, 38-9). We can look for this distinction in the measures of rates of structural adjustment in industry employment and job reallocation.

[TABLE 1]

Table 1 reports our measures of rates of structural adjustment (*SA*) between 1970 and 1992 for OECD economies grouped into the LME and CME categories. It seems quite clear from these data that, overall, LMEs do *not* exhibit higher levels of structural adjustment in employment than CMEs. On average CMEs actually have relatively higher rates of structural adjustment: the average rate of employment adjustment for the period from 1970 to 1992 is 0.14 among CME countries compared to 0.11 among LME countries. Austria, an exemplar CME with heavily

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addition, it is not calculated over a uniform set of industries.

[10] Note that this index is a variation of the index derived by Lilien (1982) and used in a range of studies (e.g., Saint-Paul 1997; Garonna and Sica 1997). The common form of the Lilien index is the employment share weighted standard deviation of annual growth rates in employment across sectors. The index is reported by the OECD (1994), but again is not calculated over a uniform set of industries.

regulated labor markets, actually has relatively high measured rates of structural adjustment. In contrast, the United States and Canada, two archetypical LMEs, have relatively low levels of adjustment. Rates of adjustment are relatively high, it should be noted, in the Scandinavian economies, perhaps as a consequence of generous retraining and relocation programs designed explicitly to facilitate economic adjustment.[11] This latter finding also lends some support to Esping-Anderson's (1990) distinction between "social democratic" and "conservative" types of European systems — the former being assumed more flexible than the latter.[12]

There is substantial variation in rates of adjustment within each of the VoC types. Across the entire period 1970 to 1992, for instance, rates of adjustment among LMEs ranged from 0.09 in the United States to 0.13 in New Zealand, while among CMEs they ranged from 0.11 in the Netherlands to 0.17 in Norway.

[TABLE 2]

The LME-CME classification has a far better fit with the measures of short-run volatility in the distribution of employment. Table 2 reports values of the *SRV* index calculated over the same time periods as above for each group of OECD economies. On average the CMEs do tend to have significantly lower rates of short-run employment change that LMEs: the average rate of volatility in CMEs for the period between 1970 and 1992 is 0.17, while for LMEs it is 0.21. Clearly differences in labor market institutions and regulations between the two different groups of economies (and especially, one imagines, the differences in employment protections) seem to generate a reasonably clear distinction between short-run employment volatility in CMEs and LMEs. But these short-run fluctuations are not an appropriate guide to comparative levels of labor specificity.

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[11] For discussions of these programs and their political origins see Lindbeck (1974), Katzenstein (1985), and Hiscox (2001a). Burgoon and Hiscox (2001) examine comparative data on adjustment assistance programs.

[12] Note that findings here also match those of Lawrence and Bosworth (1987), who concluded that the Swedish economy had much higher rates of structural adjustment in employment in the 1970s and early 1980s than did the U.S. and German economies.

[TABLE 3]

Table 3 shows rates of industry reallocation (*IR*) in employment for the different groups of economies over the set of periods. We calculated IR annually and the table reports period averages of these annual rates. The results generally fit well with the measures of rates of structural adjustment for each period (shown in Table 1). Again, the results do not match the VoC distinction. The CMEs actually have higher rates of interindustry labor movement, on average, than do the LMEs. The United States records the second-lowest rate of interindustry labor movement across the entire period 1970-92 — only France recorded a lower rate. Again the Scandinavian economies tend to exhibit relatively high rates of labor mobility. And once again there is a large degree of variation within each of the VoC categories in terms of how rapidly labor shifts between different industries.

Overall, these findings seem to run counter to the VoC approach in very important ways. Of course rates of structural adjustment and job reallocation reflect not just cross-national differences in levels of labor (and capital) specificity but also differences in the magnitude of the economic shocks to which these different economies are exposed and a range of other variables (such as the age and gender composition of the workforce) that may vary independently. Smaller countries do seem to have higher rates on adjustment and reallocation, on average, than do the larger nations in the OECD sample. In section V below we address these concerns by estimating annual rates of interindustry reallocation for OECD economies between 1970 and 1992, controlling for a range of variables (such as exposure to international trade) and testing for systematic differences between LME and CME economies. Briefly, however, we pause compare the measures of structural adjustment, short-run volatility, and industry reallocation with alternative indicators of labor specificity that have been used elsewhere.

b. Comparisons with Alternative Indicators of Labor Specificity

Consider first how the new measures compare to the cross-national data on tenure rates among workers. Estevez-Abe, Iversen, and Soskice (1999) argue that longer median tenure rates

are a good indicator of the specificity of labor skills: workers tend to stay with the same employer for longer periods when they acquire more industry and firm specific skills. Figures 1-3 plot the relationships between the median tenure rates in 1995 (used by Estevez-Abe, Iversen, and Soskice 1999) and the different indexes we have calculated for the more recent sub-period in our sample (from 1982 to 1992).

[FIGURES 1-3]

The correspondence between median tenure and structural adjustment is quite weak, as shown in Figure 1 — the correlation coefficient between the two indicators is 0.15. The relationship between median tenure and interindustry reallocation, shown in Figure 3, is also unclear — the correlation is only –0.13.[13] One obvious problem here is that the tenure data apply to the entire workforce, while our measures are derived only for the manufacturing sector. But the VoC approach does not distinguish patterns in the service sector from those that occur in manufacturing, and if the economies really can be categorized cleanly into two different groups one would imagine that the differences should be apparent (and stable) no matter which sectors we examine. Indeed, as one would expect, economy-wide tenure rates correspond quite well with our residual measure of short-run volatility in manufacturing employment, *SRV*, as shown in Figure 2 — here the correlation coefficient is a healthy –0.58. The implication is that data on tenure rates do appear to be providing a good measure of employment protection regulations that limit the capacity of firms to fire workers during downturns in the business cycle. But the same tenure rates do not appear to provide a good guide to interindustry labor movements (the types of movements that should be most affected by labor specificity).

Hiscox (2001a, 2001b) has used data on the variance between wage rates for employees in different industries as a crude, general indicator of interindustry labor specificity. The

[13] We have also tested this using more comprehensive data available on *average* tenure rates from the OECD's *Economic Outlook* for years between 1970 and 1995. We tested the same relationships using the mean rates of (average) tenure for each country over this longer period. The results are virtually identical to those shown below in Figures 1 though 3.

assumption is that when labor skills are not specific, wage differentials should be arbitraged away by the movement of workers between industries. Higher interindustry wage variance indicates greater labor specificity.[14] We used OECD data on industry earnings to calculate interindustry wage differentials for each of the economies in our sample for the two sub-periods we used when calculating our various measures employment change (1970-1981 and 1982-1992), and compared these with our measures of structural adjustment, short-run volatility, and industry reallocation for the corresponding time frames. Obviously it would be optimal to use individual-level survey data on wages, applying an array of controls for differences in skill levels, working conditions, and demographic factors, when measuring industry wage differentials in each economy. But without a comparable set of such data, we are forced to rely here on an assumption that cross-industry differences in skill composition and working conditions are reasonably similar in the manufacturing sectors of these advanced economies.[15]

[FIGURES 4-6]

Figures 4 through 6 plot the economies (in each sub-period) according to the different measures of employment change and levels of interindustry wage dispersion. Overall, the correspondence between these different measures is impressive. Countries characterized by high interindustry wage dispersion tend to have lower rates of structural adjustment (Figure 4) and job reallocation (Figure 6): the correlation coefficients are –0.64 and –0.41, respectively. These different approaches to measuring labor specificity thus seem to produce consistent results. On the other hand, as shown in Figure 5, short-run employment volatility does not appear to have any clear association with interindustry wage variation (the correlation between the two is –0.13).

[14] Different versions of inter-industry wage differentials have been used previously in studies of labor market efficiency (e.g., Krueger and Summers 1988), and interregional wage differences are commonly used to measure the geographic mobility of labor. Hiscox (2001a, 2002a) provides a more detailed review and discussion.

[15] See Hiscox (2002a) for a lengthy discussion of this issue and a study of U.S. survey data on wage dispersion, comparing the results with analysis of more aggregate data. Hiscox (2001b) shows that results derived from aggregate data for the United States and Sweden are consistent

V. Estimating Interindustry Labor Movement using Pooled Cross-Sectional Data

Cross-national variation in rates of interindustry labor movement clearly reflects other differences between countries not just levels of labor specificity. The degree to which a country is exposed to exogenous economic shocks matters. Most importantly, it is typically supposed that countries that are relatively more open to trade are more vulnerable to external economic shocks that generate volatility in incomes and structural change (Rodrik 1997). There is a counter claim, however, that countries that are more open to trade are less vulnerable to purely internal and trade-partner-specific shocks and thus may experience greater economic stability than more closed economies. In fact, Garrett (2001) has found that trade (as a percentage of GDP) had no significant relationship with income volatility across a broad sample of developed and developing economies in the 1970s and 1980s. And studies of the effects of trade liberalization in many developing nations have typically failed to find a substantial increase in structural change in these economies in periods following trade reforms (see Harrison and Hanson 1999). Perhaps competing effects are felt in different circumstances, but either way it seems clear that we should control for trade share and a range of other variables that could be independently linked to income volatility and structural change when interpreting the meaning of cross-national differences in rates of change in industry employment.

The simple approach we take here involves estimating our key measure of change in interindustry employment, interindustry job reallocation (IR), for a pooled cross-section of OECD economies for the years between 1970 and 1992. This allows us to control for a range of variables that may affect interindustry labor movements while testing for a systematic difference between LME and CME economies in the sample or, alternatively, testing for individual country fixed effects (that may or may not be consistent with the simple VoC dichotomy). The estimations

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with results produced by Edin and Zetterberg (1992) using comparable survey data on wages for those two nations and a large number of control variables when measuring industry differentials.

include trade as a share of national income, which we expect (*pace* Rodrik) will be positively associated with income volatility and structural change and thus interindustry labor movements. We also include the share of total employment in the manufacturing sector, since smaller industries may be more amenable to rapid structural change than larger industries. To control for cross-national differences in the timing of the business cycle we include the annual rate of growth in real GDP and the unemployment rate; we expect that the former will be positively related to interindustry job movement while the latter will have a negative effect, since highs in the business cycle are likely to coincide with more rapid structural adjustment and workers are less inclined to switch jobs during recessions. Finally, we include controls for the gender and age composition of the workforce, employing measures of the share of the manufacturing workforce that is female and the share of the population that is over 65. The expectations are that female workers tend to be less mobile since maternity benefits make job switching less attractive to women, and older workers tend to move less since they have shorter time horizons over which to realize the returns from investing in new skills. (The source for all data is the World Bank's *World Development Indicators 2000*). Table 4 provides summary statistics for all the variables used in the analysis.

[TABLE 4]

The results from the estimations are shown in Table 5. The estimated coefficients for each of the control variables have the anticipated signs. Exposure to international trade is positively associated with interindustry movements of labor and the effect is significant. Also as anticipated, a decrease in the size of the manufacturing sector (relative to the rest of the economy) produces a significant increase in rates of labor movement, all else equal. Business cycle effects are clearly important too. Growth rates are positively associated with labor movements, although the effect is not significant, while unemployment levels have a significant negative impact on job switching. Finally, as expected, when larger shares of the manufacturing workforce are composed of female workers, or workers in older age brackets, rates of interindustry movement tend to be lower (though not significantly so), all else equal.

[TABLE 5]

Most importantly, the basic results suggest little support for the VoC distinction between LMEs and CMEs, at least when it comes to the rate of interindustry labor movement in the manufacturing sector. The estimated coefficient for the dummy variable for LME economies in equation (1) has a positive sign, as expected, but it is not statistically significant and quite small (relative to the sample mean rate of reallocation). Including individual dummy variables for each economy reveals a great deal of variation within LME and CME types. The results reported for each country fixed effect in equation (2) are the differences between the estimated intercept for each economy and the sample mean intercept. If the VoC distinction is accurate we would expect all the country effects in the first (LME) set of economies to be positive and large relative to the country effects in the second (CME) group of countries, which should be mostly negative or relatively small. The distinction between the two sets is actually not clear at all. It is true that the LME group includes the nation with the highest rates of interindustry labor movement in these years overall (Australia), and the CME group includes the country with the lowest rates (the Netherlands), but there is a great deal of variation among economies in each category. And except for Sweden, all the Scandinavian economies, along with Austria and Japan have far higher rates of interindustry labor movement over this period than do Britain and the United States, the two economies typically held up as the LME standard-bearers.

The results are robust to changes in the specification that allow for a variety of lag effects, various types of autocorrelation patterns, and the exclusion of particular control variables and particular countries (e.g., the "outlier" countries of Australia and the Netherlands and Belgium which have the most extreme country fixed effects in the estimations). We have also performed an identical analysis using rates of structural adjustment (SA) rather than rates of interindustry reallocation as the dependent variable, calculated over periods of 3 and 5 years. All the results, for control variables and for LME and country dummy variables, are substantively identical.

What types of independent variables might help explain the cross-national variation in interindustry labor mobility? We can push a little deeper here and test one specific argument made in the VoC literature more directly. We estimate annual IR rates again, this time excluding the LME and country dummy variables and including a measure of total spending on social security transfers as a share of GDP in each economy.[16] The expectation, derived from Estevez-Abe, Iversen, and Soskice (1999), is that greater government-provided forms of social insurance will be associated with larger investments in industry specific labor skills (and thus lower rates of interindustry worker movement). Hiscox (2001a, 2001b, 2002a) has argued that temporal changes in levels of factor specificity in several advanced economies appear to be strongly related to technological shifts in methods of production. In particular, the later phases of industrialization, associated with far greater complementarity between labor skills and technology (Goldin and Katz 1996), have involved a greater reliance on specific forms of labor and capital in manufacturing. To test this proposition, we have also included a measure of real GDP per capita in the new estimations as a crude proxy for levels of advanced industrialization. Finally, we include a measure of spending on active labor market programs as a share of GDP to examine whether these policies (heavily favored in Scandinavian economies as a method of promoting economic efficiency by subsidizing worker retraining and relocation) have a significant effect on interindustry labor mobility as frequently supposed (Hiscox and Burgoon 2001).[17] The results of the new estimations are shown in table 6.

[TABLE 6]

Data on active labor market policies are limited (seven nations in the sample only report data for years after 1985), so we introduce that measure separately in equation (2). In equation (1) we include the measures of spending on social security and real per capita GDP. As might be expected based upon the arguments made by Estevez-Abe, Iversen, and Soskice (1999), increased

[16] The data are from the OECD *National Accounts* (courtesy of Brian Burgoon). Data are unavailable for New Zealand.

levels of social security are associated with lower rates of interindustry mobility. The effect is modest but significant: a two standard deviation rise in spending on social security transfers (equivalent to a full 10 percent of GDP) generates an estimated 0.11 fall in the annual rate of worker reallocation (with a standard error of 0.04). Also as expected, the level of development has as a significant negative effect on rates on interindustry labor mobility, although again the effect is not substantively large. A two standard deviation rise in real per capita income (roughly equivalent to a rise of $4200) results in an estimated 0.08 decline in the annual IR rate (standard error 0.03).[18] Finally, including the measure of spending on active labor market policies in equation (2) also produces results that fit with what we anticipated: more spending on these programs leads to higher rates of worker mobility. Here the effects, though estimated with a larger degree of uncertainty, are apparently quite large: a two standard deviation rise in spending of this type (equivalent to 1 percent of GDP) produces an increase of 4.96 in the annual IR rate (with a standard error of 3.44).[19]

V. Conclusions

Measures of levels of factor specificity in different economies, and in different sectors in these economies, are urgently required for both continuing research on the political economy of trade and for new research on comparative capitalism. In general, we need a far clearer idea of when to expect that the Stolper-Samuelson theorem will provide a more reliable guide to the preferences of economic agents over a range of policies than the alternative "specific-factors"

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[17] The data are from the OECD *Social Expenditures Database* (courtesy of Brian Burgoon).

[18] Since the degree of variation in levels of development is quite limited among this set of advanced economies in this recent period, however, this result does suggest that development (and technological change) may have had much more powerful effects on factor specificity over time.

[19] It is worth noting this last finding again tends to confirm the distinction made by Esping-Anderson (1990) between social democratic economies and other types of European systems. It is also in keeping with recent arguments made by labor economists that the various elements of labor market policy in Europe often appear to have apposite effects on labor mobility (see Blank 1994; Blank and Freeman 1994).

approach. The issue is crucial for understanding the preferences of individual workers and firms over a broad range of economic policies and institutions, and for assessing the economic and political effects of globalization. The empirical agenda thus seems very clear.

We attempt to take a step in the right direction here by examining new measures of rates of change in the industrial allocation of employment in the manufacturing sectors of OECD economies between 1970 and 1992. We argue that these measures provide a more direct way of gauging labor specificity than do the measures of enrolments in formal vocational training programs and median rates of job tenure used in the extant literature. Our main finding is that the new measures of structural adjustment in employment and interindustry job reallocation do *not* support the simple LME-CME distinction that is central to the VoC approach. There appears to be as much variation in these measures across nations within each category as there is across nations in the two different groups, even controlling for exposure to economic shocks, business-cycle effects, and age and gender variables. The findings *do* suggest that cross-national differences in social insurance are related in a positive fashion to labor specificity, which seems consistent with arguments made by VoC proponents. But labor specificity is also affected by other types of policies (particularly, active labor market programs) and by technological forces.

The findings reported here suggest several avenues for further empirical investigation of levels of factor specificity and for associated theoretical work. Firstly is seems most urgent to know whether the VoC distinction is more appropriate for other sectors of the advanced economies besides manufacturing. In particular, the CME-LME distinction may be more accurate when comparing service sectors, which account for the largest share of employment and economic activity and may be less affected by the particular technological changes in manufacturing production discussed above and by international competition. Comparable data on employment in specific service sector industries may be more difficult to compile, but this should not be a long-term barrier for analysis. Secondly, the results examined here might be replicated using more disaggregated data on industry employment (at the 3- and 4-digit levels of industry

categorization). Again, constructing comparable cross-country data sets at more detailed levels of categorization may be problematic but should be feasible in the long term.

Lastly, it seems appropriate to re-examine specific aspects of the VoC perspective in light of this new data on labor mobility. For instance, we should begin to think about the degree to which active labor market policies (used so heavily by Scandinavian governments) offset the economic and political effects of other labor market regulations and institutions shared by CME economies. And perhaps we should allow that different types of polities have very different ways of dealing with the risks posed to workers and firms by investments in specific economic assets: some systems appear to "socialize" or pool risks among taxpayers, reducing the returns to investing in such assets for individuals, but orienting policy more towards allowing for rapid structural adjustment (the Scandinavian model); other systems allow individuals to assume all or most of the risks of these investments in return for the chance to reap higher rewards, but leave policy more open to lobbying by the most influential interests who seek protection from the losses that would be imposed by structural change (the U.S. model).

Appendix

World Bank Country Codes

AUS	Australia
AUT	Austria
BEL	Belgium
CAN	Canada
CHE	Switzerland
DNK	Denmark
ESP	Spain
FIN	Finland
FRA	France
GBR	United Kingdom
DEU	West Germany
GRC	Greece
IRL	Ireland
ISL	Iceland
ITA	Italy
JPN	Japan
NLD	Netherlands
NOR	Norway
NZL	New Zealand
PRT	Portugal
SWE	Sweden
TUR	Turkey
USA	United States

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TABLE 1: Rates of Structural Adjustment (SA) in Industry Employment 1970-92

	Total 1970-92	1970-1981	1982-1992
Liberal Market Economies			
Australia	0.126	0.067	0.078
Canada	0.102	0.048	0.073
New Zealand	0.134	0.104	0.093
UK	0.119	0.060	0.061
US	0.087	0.056	0.060
Average	*0.114*	*0.067*	*0.073*
Coordinated Market Economies			
Austria	0.155	0.087	0.072
Belgium	0.153	0.086	0.077
Denmark	0.127	0.078	0.080
Finland	0.148	0.079	0.089
Germany	0.122	0.067	0.087
Japan	0.122	0.077	0.056
Netherlands	0.106	0.082	0.050
Norway	0.174	0.090	0.100
Sweden	0.139	0.084	0.080
Average	*0.138*	*0.081*	*0.077*
Ambiguous			
France	0.115	0.071	0.057
Italy	0.088	0.062	0.044

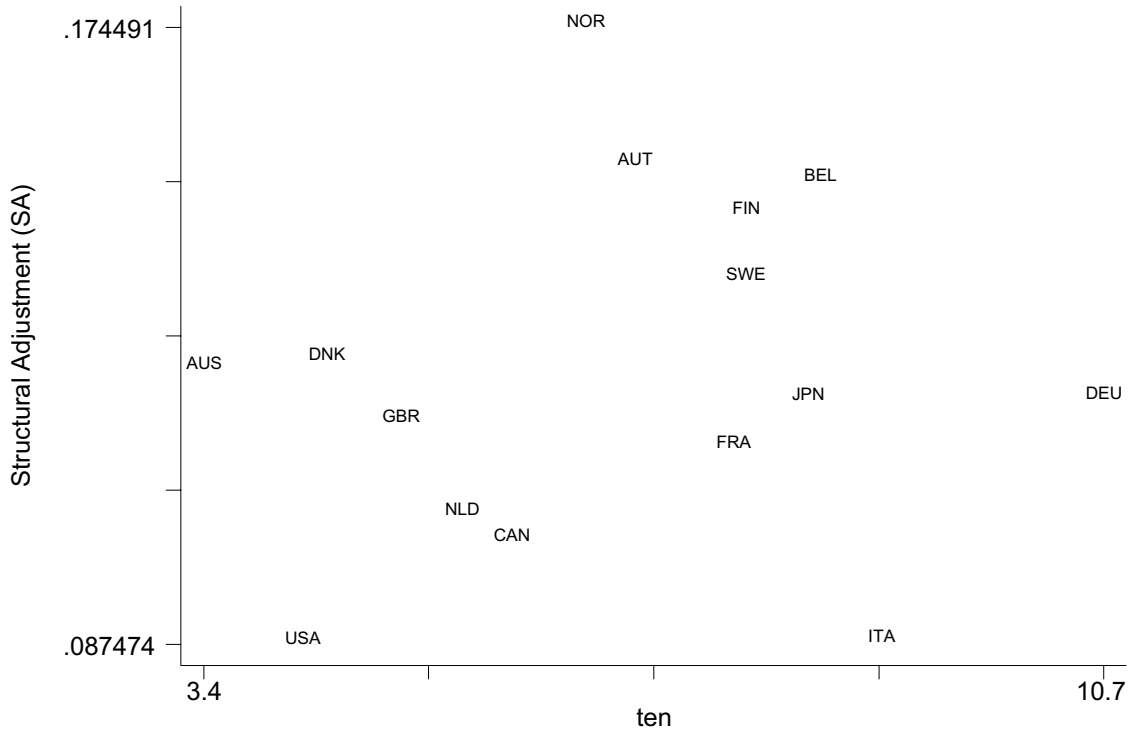
TABLE 2: Rates of Short-Run Volatility (SRV) in Industry Employment 1970-92

	Total 1970-92	1970-1981	1982-1992
Liberal Market Economies			
Australia	0.253	0.087	0.148
Canada	0.223	0.102	0.102
New Zealand	0.256	0.085	0.108
UK	0.138	0.063	0.073
US	0.186	0.084	0.074
Average	*0.211*	*0.084*	*0.101*
Coordinated Market Economies			
Austria	0.176	0.080	0.092
Belgium	0.138	0.072	0.056
Denmark	0.198	0.100	0.068
Finland	0.199	0.090	0.088
Germany	0.089	0.042	0.014
Japan	0.170	0.092	0.068
Netherlands	0.140	0.053	0.062
Norway	0.201	0.090	0.095
Sweden	0.170	0.045	0.100
Average	*0.165*	*0.078*	*0.071*
Ambiguous			
France	0.075	0.022	0.040
Italy	0.171	0.053	0.100

TABLE 3: Rates of Industry Reallocation (IR) in Employment, 1970-92

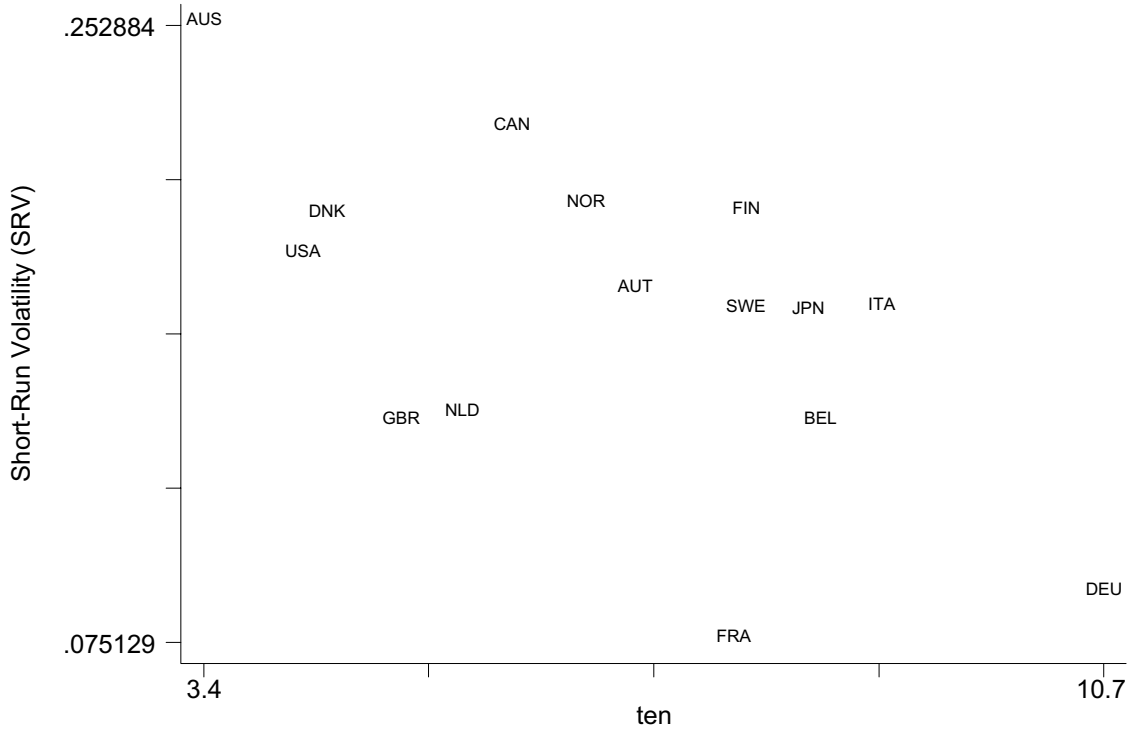
	Total 1970-92	1970-1981	1982-1992
Liberal Market Economies			
Australia	0.433	0.433	0.553
Canada	0.277	0.337	0.217
New Zealand	0.394	0.523	0.264
UK	0.222	0.182	0.262
US	0.185	0.144	0.226
Average	*0.302*	*0324*	*0.304*
Coordinated Market Economies			
Austria	0.452	0.449	0.455
Belgium	0.298	0.326	0.270
Denmark	0.380	0.412	0.347
Finland	0.316	0.318	0.315
Germany	0.222	0.238	0.207
Japan	0.407	0.510	0.304
Netherlands	0.204	0.199	0.208
Norway	0.494	0.618	0.370
Sweden	0.335	0.288	0.382
Average	*0.345*	*0.373*	*0.318*
Ambiguous			
France	0.144	0.173	0.115
Italy	0.275	0.231	0.320

FIGURE 1: Rates of Structural Adjustment (1970-92) and Median Tenure (1995)*



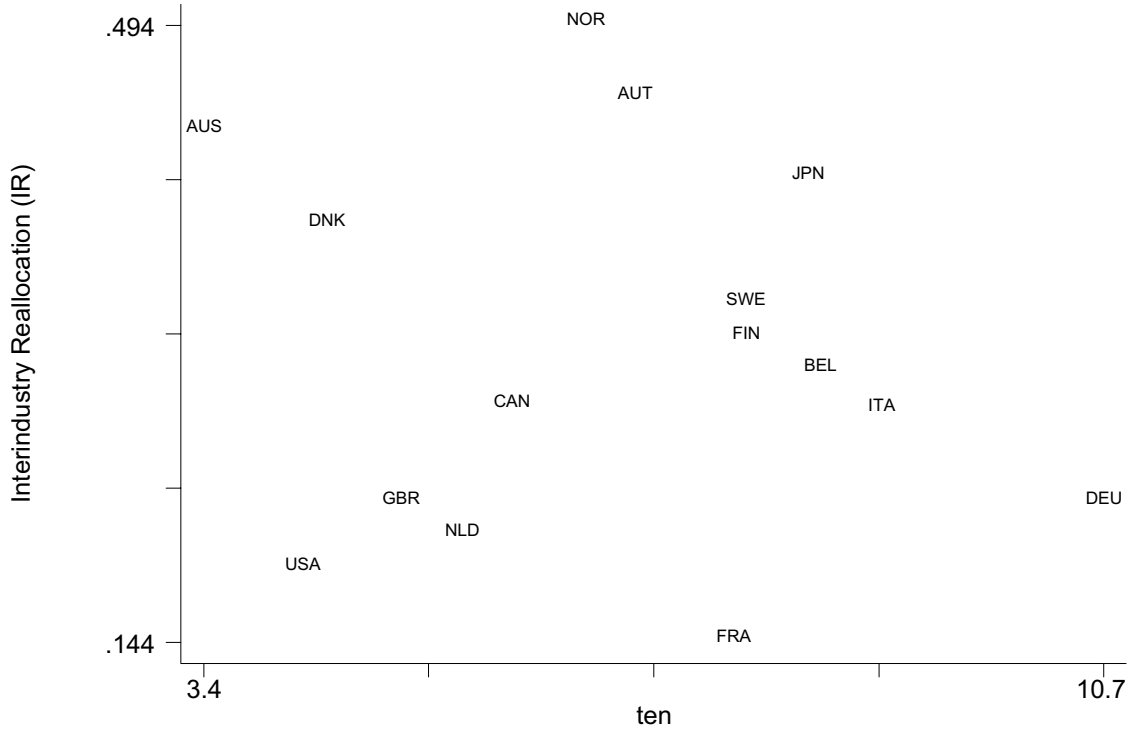
* See appendix for key to World Bank 3-letter country codes.

FIGURE 2: Rates of Short-Run Volatility (1970-92) and Median Tenure (1995)*



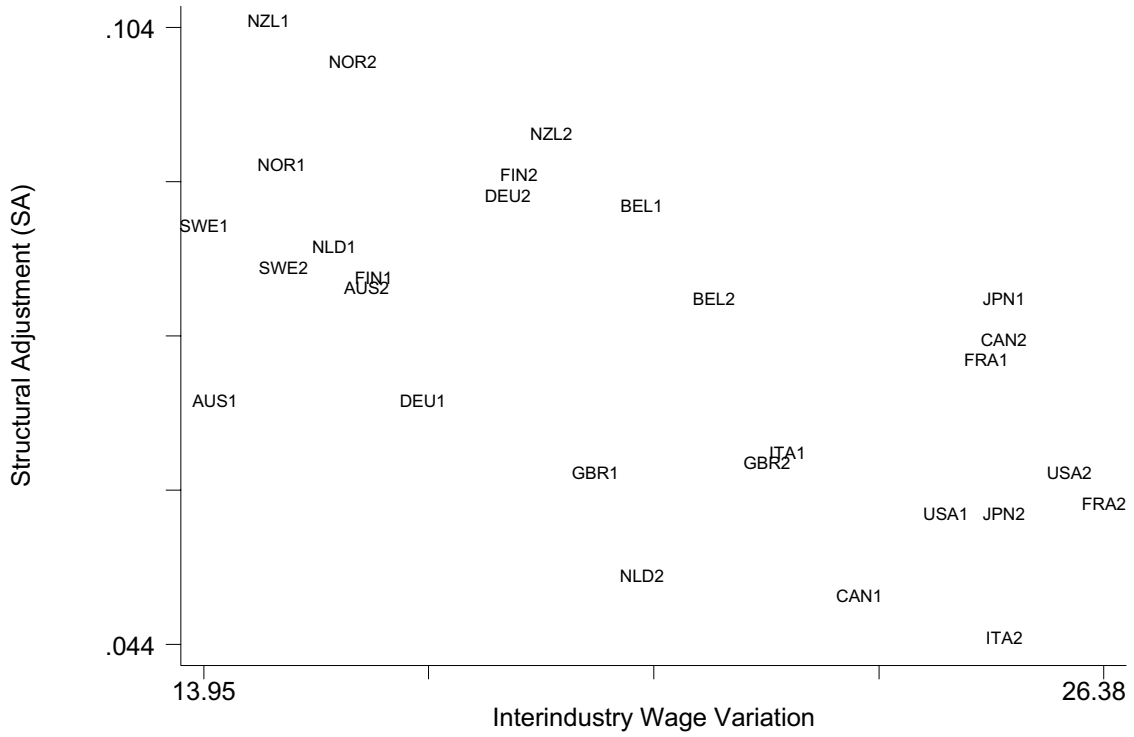
* See appendix for key to World Bank 3-letter country codes.

FIGURE 3: Rates of Interindustry Reallocation (1970-92) and Median Tenure (1995)*



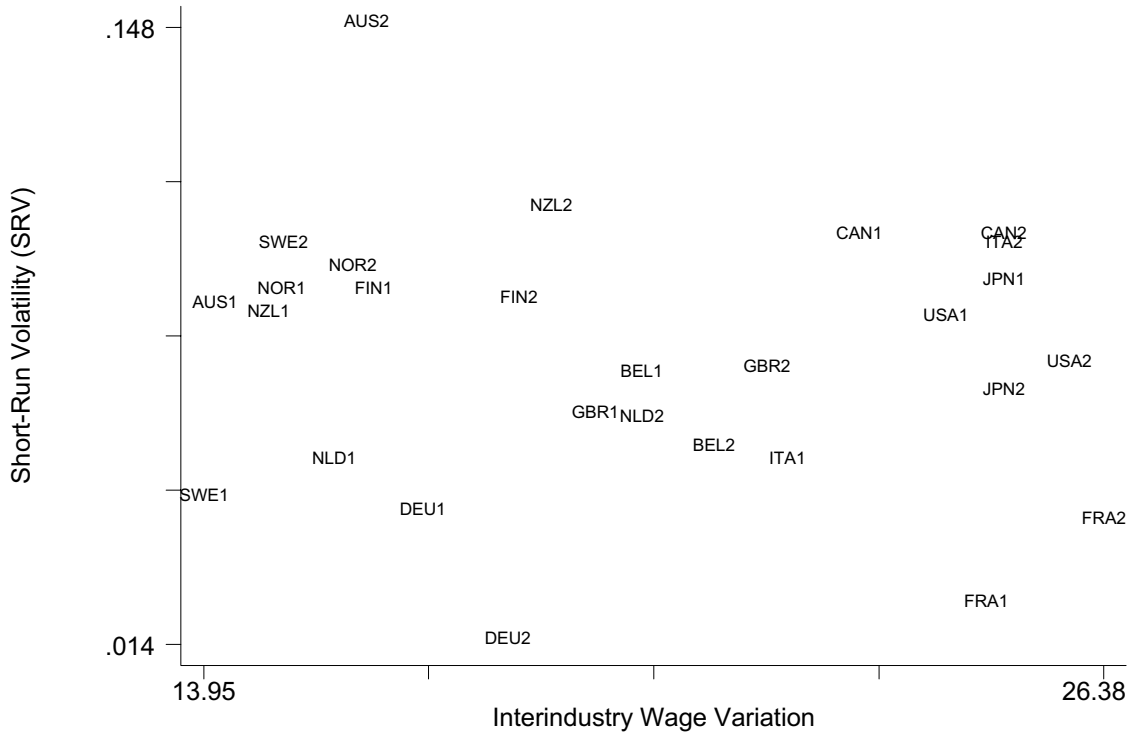
* See appendix for key to World Bank 3-letter country codes.

FIGURE 4: Rates of Structural Adjustment and Interindustry Wage Dispersion*



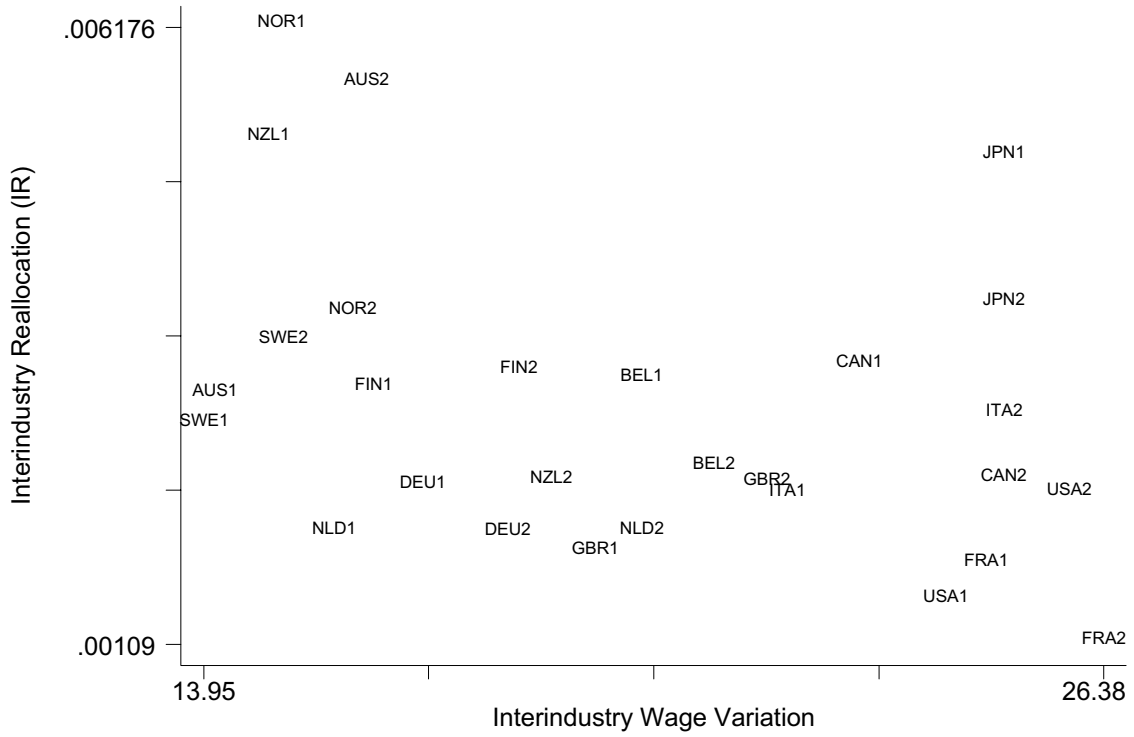
* See appendix for key to World Bank 3-letter country codes. SA and average coefficient of variation among annual industry earnings per worker calculated for two periods: 1970-81 (1) and 1982-92 (2).

FIGURE 5: Rates of Short-Run Volatility and Interindustry Wage Dispersion*



* See appendix for key to World Bank 3-letter country codes. Average SRV and coefficient of variation among annual industry earnings per worker calculated for two periods: 1970-81 (1) and 1982-92 (2).

FIGURE 6: Rates of Interindustry Reallocation and Interindustry Wage Dispersion*



* See appendix for key to World Bank 3-letter country codes. IR and average coefficient of variation among annual industry earnings per worker calculated for two periods: 1970-81 (1) and 1982-92 (2).

TABLE 4: Summary Statistics

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
IR as percentage	352	0.315	0.296	0	3.290
Trade share of GDP	352	0.576	0.277	0.114	1.563
Manufacturing employment share of total	352	0.332	0.052	0.227	0.484
Growth in real GDP	352	2.088	2.187	-7.9	7.0
Unemployment rate	352	5.580	3.208	0.7	13.2
Female share of labor force	352	0.395	0.047	0.238	0.480
Share of population over 65 years	352	0.343	0.022	0.298	0.402
Social security transfers as share of GDP	330	0.154	0.051	0.048	0.289
Real GDP per capita (‘000 dollars 1992)	352	11.91	2.110	7.510	18.10
Active labor market spending as share of GDP	166	0.008	0.005	0.001	0.031

TABLE 5: Estimations of Annual Rates of Industry Reallocation (IR), 1970-1992[a]

Dependent Variable = IR (as percentage):	(1)	(2)[b]
Trade share of GDP	0.100* (0.058)	0.384 (0.261)
Manufacturing employment share of total	-0.706** (0.360)	-0.630 (1.143)
Growth in real GDP	0.007 (0.008)	0.005 (0.008)
Unemployment rate	-0.029*** (0.008)	-0.020** (0.010)
Female share of labor force	-0.177 (0.295)	-0.936 (1.331)
Share of population over 65 years	-0.885 (0.752)	-0.812 (1.456)
Constant/ Average intercept	1.006** (0.483)	1.055 (0.962)
Dummy for LME	0.029 (0.040)	
Australia		0.191
Canada		0.007 (0.095)
New Zealand		0.031 (0.152)
UK		-0.013 (0.138)
US		0.047 (0.112)
Austria		0.062 (0.199)
Belgium		-0.253 (0.269)
Denmark		0.083 (0.145)
Finland		0.044 (0.170)

Germany		-0.025 (0.197)
Japan		0.136 (0.148)
Netherlands		-0.340 (0.221)
Norway		0.047 (0.147)
Sweden		0.010 (0.166)
France		-0.055 (0.119)
Italy		0.024 (0.124)
Observations	352	352

a. Least squares estimations with panel-corrected standard errors in parentheses.
b. Country fixed effects are shown as differences from the average intercept (panel-corrected standard errors for coefficients in parentheses).
*p<.10 **p<.05 ***p<.01

TABLE 6: Further Estimations of Annual Rates of Industry Reallocation (IR), 1970-1992[a]

Dependent Variable = IR (as percentage):	(1)	(2)
Trade share of GDP	0.184***	0.176***
	(0.066)	(0.038)
Manufacturing employment share of total	-1.082***	-1.503***
	(0.368)	(0.605)
Growth in real GDP	0.013**	0.021***
	(0.007)	(0.008)
Unemployment rate	-0.021***	-0.014**
	(0.006)	(0.007)
Female share of labor Force	0.288	-0.191
	(0.265)	(0.607)
Share of population over 65 years	-1.228*	-0.590
	(0.660)	(0.690)
Social security transfers as share of GDP	-1.057***	-2.142***
	(0.385)	(0.573)
Real GDP per capita ('000 dollars 1992)	-0.017**	-0.029**
	(0.008)	(0.013)
Active labor market spending as share of GDP		4.967
		(3.436)
Constant	1.329***	1.693***
	(0.403)	(0.497)
Observations	330	153

a. Least squares estimations with panel-corrected standard errors in parentheses.
*p<.10 **p<.05 ***p<.01