Two Worlds of Capitalism:
Ricardo versus Heckscher-Ohlin

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Abstract
This paper outlines a general approach to the study of comparative political economy, which emphasizes the importance for political and economic phenomena of the investments that individuals make in risky assets. Assets that are highly specific to their current use can be rendered obsolete by technological and other shocks, and in anticipation economic agents either shun investments in specific assets, or turn to the state for protection. The choice has profound effects on national policies and institutions, dividing countries into specific asset (“Ricardian”) or general asset (“Heckscher-Ohlin”) economies, and these differences are reinforced through international trade and investment. Building our argument on explicit micro-foundations, we show how the approach can help explain national differences in i) social protection, ii) institutions of political representation, and iii) macroeconomic policy-making and outcomes.
1. Introduction

The fundamental notion in this paper is economic agents under capitalism are making investments in assets that are more or less risky because technological change and business cycles can render these investments worthless in the future. One way that agents can protect themselves against this uncertainty is to invest primarily in assets that can be easily redeployed – that is, general assets; another is to create a set of policies and institutions that protect individuals from the potential risks of investment in assets that are highly specific. Once investment in certain types of assets have occurred, they strengthen support for policies and institutions that maximize the return on these investments, and these policies and institutions in turn attract more investment into the types of assets they protect. In turn, because of the relative abundance of assets associated with particular institutions and policies, countries acquire comparative institutional advantages (Hall and Soskice 2001) that lead to further specialization in the relatively abundant asset, as well as in the institutions and policies that complement them.

We are building our argument on the seminal work of Ronald Rogowski (1987, 1990), Jeffry Frieden (1991), and Alt et al. (1996), but with some important differences that take us to the recent literature on varieties of capitalism, pioneered by scholars such as Peter Hall (1985), Fritz Scharpf (1991), David Soskice (1990), and Wolfgang Streeck (1991) (see also Hollingsworth, Schmitter, and Streeck, 1994). First, we argue that 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. Secondly, following the emphasis on institutions in Katzenstein (1985) and Garrett and Lange (1996), we argue that asset specificity is endogenously determined and unevenly distributed in time and space depending on domestic institutions and the position of economies in the international division of labor (see also Gourevitch 2001).
We focus our discussion in this paper on three key puzzles in the comparative political economy literature, and show how our approach help solve each of these puzzles. The first is why social protection has been significantly scaled back in countries such as Britain, New Zealand, and the US, but not in continental Europe where the support for the welfare state continue to be high. Contrary to predictions, globalization has not led to convergence around a minimalist welfare state. In fact, it is the smallest welfare states that have been subject to the most severe cutbacks. Why?

Secondly, comparative political economy has long noted an association between political institutions -- electoral systems and the organization of interests in particular -- and other features of political economies such as the size of welfare state (Huber, Ragin and Stephens 1993; Crepaz 1998), political business cycles (Alberto, Roubini, and Cohen 1997), industrial policy (Katzenstein 1985), and partisan politics (Lange and Garrett 1985). Majoritarian systems and pluralist interest group politics tend to be linked to small welfare states, arms-length industrial policies, and political business cycles, while PR systems with corporatist interest intermediation tend to be linked to large welfare states, interventionist industrial policies, and partisan macroeconomic regimes. We seek to understand these associations with reference to the nature of asset investments and the unique set of institutional design problems they give rise to.

Finally, the variance in unemployment across time and space seems too great to fit into standard economic models that predict a unique equilibrium rate of unemployment, even taking into account cross-national differences in labor market institutions. Moreover, many governments seem to be behaving as if they believe that they can affect employment through macroeconomic policies. This is perhaps best exemplified by the Maastricht convergence criteria which were explicitly designed to prevent governments from using their discretion over fiscal policy. What is the source of these multiple unemployment equilibria and partisan macroeconomic policies?

We argue that all three puzzles can be explained by systematic differences across countries in the level of investment that key economic and political actors have made in specific, as opposed to
general, assets. In the case where investments are predominantly in general assets, which we will refer to as a Heckscher-Ohlin (H-O) world, governments can have little fiscal policy autonomy due to factor price equalization, and demand for social spending will be muted. These traits tend to be associated with political institutions that offer considerable policy flexibility but little capacity for commitment. On the other hand, in the case where investments are predominantly in specific assets, which we will refer to as Ricardo-Viner (R-V) world, governments will both have the capacity and incentive to manipulate the real economy, and support for social spending will be high. These traits tend to be associated with political institutions that offer high capacity for commitment but little policy flexibility.

When economies trade with one another, and investment can flow across borders, differences between H-O and R-V economies are reinforced as countries specialize in production, institutions, and policies that make most intensive use of the most abundant assets. In short, 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. The logic of the causal argument is illustrated by the bolded part of Figure 1.

The paper is divided into three sections. The first sets out the argument about the relationship between type of asset investment and social protection, while the second outlines the relationship between political institutions and asset investments. The third section develops the macroeconomic argument and shows how asset specificity is related to partisan macroeconomic policies and outcomes, but also to particular economic institutions.

As argued by Kramer, Stephenson and Lange (2000), since the causal logic is at the level of individual actors, it is important to show that macro-patterns are consistent with individual preferences and behavior, and could have been generated by these. Each section is therefore complimented by supporting empirical evidence at both the individual and aggregate levels.
2. Social protection
We begin our analysis with a model of the key idea in our argument, namely that policy preferences for social protection are determined by the desire of economic agents to protect the future value of the assets in which they have made sunk investments. We focus on human capital investments because these constitute the largest share of total productive assets in a modern economy and because such investments have direct implications for mass political preferences and democratic politics. The full model is explained in Iversen and Soskice (2001). Here we focus only on the main result that is relevant for our broader argument.

2.1. The model
Following Becker (1964) we assume that workers derive their income from skills that can be either general or specific. General skills are skills that can relatively easily be applied in different
occupations and sectors of the economy, whereas specific skills are skills that are tied to a particular job, occupation, or sector. Clearly, this variable is continuous and runs from completely portable skills, such as literacy, to highly specialized craft skills, such as manual typesetting, but for simplicity the model only divides skills into specific and general varieties. As illustrated in Figure 2, we further distinguish between three different employment situations, or states of the world, each associated with a distinct level of income. For a particular worker, state \( I \) and \( II \) both refer situations where the worker is employed, but only jobs in state \( I \) fully utilize and compensate the worker for his or her specific skills, with a market wage of \( s_g \). In state \( II \) the workers is employed in a job where only his or her general skills are utilized and compensated, with a market wage of \( g \).

The distinction between state \( I \) and \( II \) is crucial for our argument because it captures the idea that technological change, or other shocks that shifts the demand for particular types of skills, can render specific skills obsolete and thereby eliminate the returns on the assets that these skills represent. For example, with the widespread introduction of computers into publishing, the skilled typesetter quickly disappeared from the payroll of virtually every major publishing house. The skills required to do manual typesetting became unemployed, even if the workers who possessed these skills eventually found employment in other occupations.\(^1\)

Workers, however, can also become unemployed outright, which is referred to as state \( III \) in Figure 2. All workers are subject to unemployment with the probability \( p \) in a given period of time, as well as the probability \( q \) of re-employment. However, whereas the likelihood of reemployment into a job where a worker’s skills are fully utilized is \( q \) for general skills workers, it is only \( rq \ (r<1) \) for specific skills workers, so the risk of not finding a suitable job is therefore greater for an unemployed specific skills worker than an unemployed general skills worker.

\(^1\) In the following we therefore sometimes talk about “unemployed assets,” even when we refer to employed workers.
In addition to market income, workers receive transfer income from the government that are paid out of taxes, \( t \), on all market income. We assume that all tax receipts are spend on transfers so that budgets are balanced. The transfer is paid as a flat-rate benefit, \( R \), which implicitly assumes redistribution from those with income above the mean to those with incomes below the mean. This is a standard assumption with strong empirical support (see Gottschalk and Smeeding 2000 and Huber and Stephens 2001).

It is also standard to assume that taxation creates work disincentives, and we capture this by a simple labor supply function that is negative in \( t \):

\[
 l(t) = \frac{1}{1 + t}.
\]

where \( l(t) \) is the number of hours worked or the intensity of effort.

The long-run probabilities of being in each state of the world depend on the probabilities of employment, of unemployment and re-employment into a particular state, and we assume that workers maximize the expected present value, \( V \), of income from being in each state:

\[
 V = \alpha \cdot u(\bar{s}g) + \beta \cdot u(\bar{g}) + \gamma \cdot u(R),
\]
where $\dot{a}$, $\dot{a}$, and $\dot{a}$ are the long-run, or equilibrium, probabilities, and $u(.)$ is the worker’s utility from net income. For simplicity, but without consequences for our main results, we assume that there is no discounting of future and that income is spent on consumption. Also, marginal utility is assumed to be declining in consumption and we impose a constant Arrow-Pratt relative risk aversion ($RRA$) function to capture the effects of risk-aversion on preferences.

Finally, we assume for the time being that the preferences of the median voter determine policy, $R$, and that political parties competing for the support of the median voter can credibly commit to a policy. We later show what happens when these constraining assumptions are relaxed.

To facilitate the presentation of the main result, we define expected hourly income before taxes and transfers, $y$, as:

$$y = \alpha \cdot s + \beta \cdot g.$$  \hfill (3)

We can then find the value of $R$ that maximizes $V$ if we keep a constant income, $y$, but vary the composition of skills, $s/g$. Alternatively, we can ask what happens to the preferred level of $R$ when skills are constant but income changes. In appendix A we show that if $RRA > 0$ (there is some risk aversion), $\frac{\partial R}{\partial s} > 0$, and if RRA is not too great, $\frac{\partial R}{\partial y} < 0$. In other words, as peoples’ skills become more specific, and as their income goes down, the preferred level of social spending goes up.

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2 $p \cdot e = q \cdot \gamma$, where $e$ is the share of the workforce that is unemployed ($e = 1 - \gamma$). This implies that in equilibrium $e = q/(p+q)$.

3 Specifically,

$$u(c) = \frac{c^{1-a}}{1-a} \quad \forall \ a > 0 \neq 1$$

$$= \log c \quad \text{for} \quad a = 1$$

4 The condition is that $RRA > \frac{\bar{s}g}{\bar{s}g - \bar{w} / 2}$.
These results are illustrated in Figure 3. The horizontal axis measures income, where $M$ is the median income and $w$ is the mean income in society (assuming a typical right-skewed distribution of income). Support for redistributive spending will fall as income rises (the risk aversion condition is shown in the figure). This is because there is a redistributive aspect to spending that disproportionately benefit people with lower incomes. If we now assume that the person with the median income is identical to the pivotal median voter, we get the famous Meltzer-Richard result that the median voter will support redistributive spending up to the point where the benefits to the median voter from redistribution are exactly outweighed by the efficiency costs of higher taxation (Meltzer and Richard 1981).

In our model, however, another motive enters into the determination of policy preferences, namely insurance against loss of income. Because even high income workers desire some insurance, support for moderate spending will extend well into the upper middle classes, a possibility that is ruled out the purely redistributive Meltzer-Richard model. Indeed, if people are highly risk averse, the preferred level of spending may even be rising with income as argued by Moene and Wallerstein (2001). As we show later, however, we find no empirical support for this hypothesis.

The critical way in which the insurance motive enters into our model is through skills. Because those with specific skills (a high $s/g$ ratio) are more vulnerable to lose their income from these skills, they have a stronger incentive to support government-sponsored income protection. Support for social protection is thus a function of peoples’ endowment of assets in a double sense: total assets, which for most people are closely tied to their skills, determine peoples’

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Moene and Wallerstein except high-income people from this logic on grounds that they face little risk. So the positive relationship between income and demands for protection only holds for those with below average income.
Figure 3. The theoretical relationship between income, skills, and social spending

\[ 0 < RRA < \frac{\bar{z}^R}{\bar{z}^R - \bar{w} / 2} \]

relative position in the income distribution, and hence the strength of the redistributive motive, while the composition of their skills determine demand for income insurance.

The macro-level implication of our argument is that if skill profiles vary systematically across countries, political demand for social protection should likewise vary systematically. Assuming that these demands find expression through the democratic political process -- as in the median voter model, for example -- our micro-level argument can potentially account for a substantial portion of the macro-level variance in social protection across countries. This possibility, which we believe is a unique prediction of our model, is reinforced by a large political economy literature that emphasize national differences in training systems, and the national distinctiveness of individual investment in education.
If our argument is correct it also has implications for our understanding of the relationship between the global economy and the welfare state. Because social protection serves as an insurance against loss of specific skill investments, social protection may well be a requisite for such investments in the first place. Firms that depend on a workforce with extensive specific skills to compete effectively in their chosen product markets can therefore benefit from high levels of social protection. Conversely, firms that depend primarily on workers with general skills would be harmed by the costs of social protection without benefitting from the supply-side effects of higher protection. Whether social protection undermines international competitiveness therefore depends entirely on the position of countries in the international division of labor. If internationalization intensifies the search for comparative advantage, therefore, we would expect it to be associated with divergence rather than convergence in social policies.

2.2. The evidence

Micro-level.
As suggested by Figure 3, the model can be tested at the individual level by a simple linear regression relating support for social spending to income and skills. We use mass opinion data for 11 advanced democracies from the 1996 International Social Survey Program (ISSP 1999) for this test. The survey asked people whether they would prefer more or less government spending in four spending areas that are all related to our theoretical spending variable, $R$. The areas are unemployment benefits, health care, pensions, and spending on declining industries for the
purpose of protecting jobs.\textsuperscript{6} We are here using a simple additive index as a proxy for \( R \), but the results are very similar if we run the regression for each spending area separately.

On the independent side, income (\( y \)) is measured as self-reported pre-tax and transfer income (converted into dollars at 1996 exchange rates). As explained in detail in Iversen and Soskice (2001), the skill specificity measure is a composite index of four indicators. Since the results for each indicator are very similar, we only show the results for the composite index. Two of these indicators are based on ILO’s detailed classification of people’s occupations: the International Standard Classification of Occupations (ISCO-88). ISCO-88 classifies workers in “occupations” based on the level of skills required for each occupation, as well as the degree of specialization of the required skills. Because of the hierarchical nature of ISCO-88, the greater the degree of skill specialization in each higher-level category, the larger the number of occupational classes in that category. We can use this information to construct a measure of skill specificity for each higher-level occupational group by dividing the share of lower-level groups in that group by the share of employment in the group. Dividing the resulting measure by ILO’s recorded level of total skills required by a certain occupation, or alternatively by the respondent’s level of formal education, we get measure for either \( s/(s+g) \) or \( s/g \). According to the theory, both are reasonable proxies for skill composition.

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\textsuperscript{6} The unemployment, health, and retirement questions are based on the following survey question:

“Listed below are various areas of government spending. Please show whether you would like to see more or less government spending in each area. Remember that if you say ‘much more’, it might require a tax increase to pay for it.” The respondent is then presented with the different spending areas (unemployment, health, retirement) and the following range of possible responses: “1. Spend much more; 2. Spend more; 3. Spend the same as now; 4. Spend less; 5. Spend much less; 8. Can’t choose, don’t know.”

The subsidy variable is based on the following question:

“Here are some things the government might do for the economy. Please show which actions you are in favor of and which you are against. Please tick one box in each line.” One of the actions is: “Support for declining industries to protect jobs: 1. Strongly in favor of; 2. In favor of; 3. Neither in favor of nor against; 4. Against; 5. Strongly against; 8. Can’t choose, don’t know; 9. NA, refused.”
We are of course aware that many factors, such as current work satisfaction, that are unrelated to skills influence peoples’ answers. But these are unlikely to be systematically related to social policy preferences.

The other two proxies are based on a survey question that asks respondents: “If you were looking actively, how easy or difficult do you think it would be for you to find an acceptable job?” The respondent could answer “very easy”, “fairly easy”, “neither easy nor difficult”, “fairly difficult”, and “very difficult.” This question is relevant to our purposes since the difficulty of finding an acceptable job is theoretically related to how portable a person’s skills are. As we noted above, the probability of moving from any particular job into one that makes use of a worker’s skills (state I) is $rq$ for specific skills workers, whereas it is $q$ for general skills workers ($r<1$). Asking people about the probability of finding an acceptable job is therefore likely to generate answers that are systematically related to a person’s skills. The only ambiguity is whether the question taps workers absolute level of specific skills or the relative share of their skills that is specific. To make sure that it is a relative measure we can divide by respondent’s level of formal education, although the results are similar for both measures. In the composite index, both proxies were used.

The pooled results for 10 countries are shown in Table 1 (the regressions included a full set of country dummies that are not shown). The results for Italy conforms to the key findings in this table, but since several controls are missing in the Italian case we omitted it in Table 1. The results are also very similar each of the countries included in Table 1, and are omitted here for space reasons (see Iversen and Soskice 2001 for details). The analysis includes a set of standard controls, which all turn out to be of secondary importance compared to skills and income. We will not discuss the controls here, but simply note that the results for the theoretical variables are robust to the inclusion or exclusion of any combination of controls.

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7 We are of course aware that many factors, such as current work satisfaction, that are unrelated to skills influence peoples’ answers. But these are unlikely to be systematically related to social policy preferences.
Table 1. Support for social spending among the publics of 10 OECD countries, 1996 (t-scores in parentheses).

<table>
<thead>
<tr>
<th></th>
<th>Dependent variable: Support for social spending&lt;sup&gt;1)&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-1</td>
</tr>
<tr>
<td>Income</td>
<td>-0.0023**</td>
</tr>
<tr>
<td></td>
<td>(-17.33)</td>
</tr>
<tr>
<td>Skills (s)</td>
<td>0.146**</td>
</tr>
<tr>
<td></td>
<td>(19.72)</td>
</tr>
<tr>
<td>Age</td>
<td>0.002**</td>
</tr>
<tr>
<td></td>
<td>(5.21)</td>
</tr>
<tr>
<td>Gender (female)</td>
<td>0.14**</td>
</tr>
<tr>
<td></td>
<td>(12.02)</td>
</tr>
<tr>
<td>Union membership</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Part-time empl.</td>
<td>-0.02</td>
</tr>
<tr>
<td></td>
<td>(-1.05)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>0.19**</td>
</tr>
<tr>
<td></td>
<td>(7.15)</td>
</tr>
<tr>
<td>Non-employed</td>
<td>-0.05**</td>
</tr>
<tr>
<td></td>
<td>(-3.38)</td>
</tr>
<tr>
<td>Self-employed</td>
<td>-0.15**</td>
</tr>
<tr>
<td></td>
<td>(-8.11)</td>
</tr>
<tr>
<td>Informed</td>
<td>0.03**</td>
</tr>
<tr>
<td></td>
<td>(5.03)</td>
</tr>
<tr>
<td>L-R party support</td>
<td>-0.03**</td>
</tr>
<tr>
<td></td>
<td>(-11.12)</td>
</tr>
<tr>
<td>Adj. R-squared</td>
<td>0.21</td>
</tr>
<tr>
<td>N</td>
<td>14,101</td>
</tr>
</tbody>
</table>

Key: * significant at the .01 level

Notes: <sup>1)</sup> All regressions included a full set of country dummies (not shown); <sup>2)</sup> excludes Australia for which union membership data are not available.

As expected, higher income reduces support for spending, while greater skill specificity increases support. The relationship is illustrated in Figure 4, which shows the effects on social policy preferences for different levels of income, as well as for two different compositions of skills. Note the close match to the theoretical predictions in Figure 3. In combination, a one standard
A deviation change in both income and skills is associated with a .25 standard deviation change in preferences. This effect is roughly equivalent to the combined effect of a one standard deviation change in all the control variables. The skill and income variables are also the most important in explained variance in the dependent variable, accounting for between half and three quarters of the explained variance. There is thus little doubt that skill assets, both the income they generate and the risks they engender, are key in explaining individual support for social spending.

Figure 4. The empirical relationship between income, skills, and social spending

Notes: Simulated from the results in Table 1, column (1), keeping all controls at their means. The effects of a one standard deviation change in income are illustrated by the dotted lines while the effects of a one standard deviation change in skills are shown with dashed lines.
Macro-level.

Our 11 countries (including Italy) divide rather neatly into five with highly institutionalized vocational training systems, and five with poor vocational training systems (but good general education). In the first category of countries -- France, Italy, Germany, Norway, and Sweden -- a large percentage of an age cohort go through a longer vocational training (typically 3-5 years), and such training is geared towards developing specific skills: either for a particular firm, a particular industry, or some combination of the two. The share of an age cohort that goes through a vocational training in these countries varies between 29 and 36 percent.\(^8\)

Among the general skill countries -- Australia, Britain, Canada, Ireland, New Zealand, and the US -- only Britain and Ireland have anything that comes close to an institutionalized vocational training system. In both cases about 9 percent of an age cohort goes through vocational training. However it is widely recognized that genuine vocational training in Britain has been on the decline since the early 1970s (Wood 1997), and the so-called General National Vocational Qualifications system, introduced with the intention of providing higher-level vocational qualifications, is now seen as more akin to an intermediate general degree than to a vocational qualification. For the other general skills countries, initial vocational training tends to be weak and relatively short (2 years and less), and even counting short-term post-secondary degrees (such as the American junior college system) only between three and four percent of an age cohort acquire a vocational degree.

In order to examine whether these differences in skill systems are linked to differences in social protection, Figure 5 compares the two groups of countries on four indicators of social protection. The first is a composite measure of unemployment protection, the second is the OECD’s measure of employment protection, the third is a measure of the degree of coordination in wage-setting (a key component of the wage protection system), while the fourth is government social transfers as

\(^8\) Based on UNESCO (1999) figures for the number of students in secondary vocational training or in short-term tertiary programs leading to vocationally oriented degrees (ISCED5).
Figure 5. Skill systems and social protection.


2) OECD’s index of employment protection based on the “restrictiveness” of individual hiring and firing rules, as well as collective dismissal rules. Source: OECD Employment Outlook (1999).

3) Average of three indicators: a) net unemployment replacement rates for a 40 year old representative worker; b) The share of GDP paid in unemployment benefits as a percent of the share of the unemployed in the total population; and c) Index that measures the restrictiveness of the definition of a “suitable job” in the administration of benefits to the unemployed. Sources: See Estevez et al. 1999.


5) 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 as a percent of GDP (1980-95). Sources: Cusack (1991) and OECD, National Accounts, Part II: Detailed Tables (Paris: OECD, various years).
a proportion of GDP. The last is closest the conception of social protection used in the model and in the analysis of public opinion. The numbers next to the country labels are the percentages of an age cohort receiving some kind of secondary or post-secondary vocational training.

What stands out from this comparison is that all the specific skills countries have notably higher levels of protection than any of the general skills countries. Using the mean of the four indicators as a proxy for the overall level of protection, a simple dummy variable for skill system explains 86 percent of the variance in protection. If we use the shares of an age cohort in some kind of vocational training as the independent variable, the explained variance is 84 percent. Since we know from the micro-level analysis that specific skill workers demand more social protection than general skills workers, this precisely what we would expect to find.

This conclusion is supported by data from a larger sample of 19 OECD countries. The data are limited to the period 1980-1995 for which we have comparable figures for the share of an age cohort going through vocational training. This share serves as our macro-level proxy for the importance of specific skills in the labor force (the average \( s \)). The effect of relative income, the other variable in our theoretical model, is captured by a widely used OECD measure of (pre-tax) earnings inequality (d1/d9 ratios). If we control for per capita income (or mean income), an increase in inequality implies a reduction in the income of the median voter, assuming a usual right-skewed distribution of income. The effect of wage inequality therefore captures the importance of cross-national differences in the relative income of the median voter (\( y \)). Exactly as in the micro-level analysis the parameter for \( s \) is expected to be positive and the parameter for \( y \) to be negative.

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9 The countries are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, UK, and the US. We are missing data on some variables for Greece and the New Zealand, and have excluded them to facilitate the presentation.
In addition to the measures of relative income and skills, we control for the effects of variables that are widely hypothesized to affect social spending. Measures of the partisan composition of government and unionization rates are designed to capture the argument that a strong labor movement and left party control of government lead to more social spending (see, for example, Korpi 1989; and Huber and Stephens 2001). Trade openness, measured in terms of trade as a percentage of GDP, is designed to capture the argument that exposure to international competition causes labor market uncertainty and demand for compensating social spending (see Cameron 1978, Katzenstein 1985, and Rodrik 1998). Finally, GDP per capita tests “Wagner’s Law,” which says that demand for social services is income elastic.\textsuperscript{10}

Table 2 shows the results of a multiple regression using transfers as a share of GDP as the dependent variable and inequality, vocational training, and the various controls as independent variables. Because the data are limited in time (a problem that is exacerbated by many missing observations on the inequality measure), and because spending is relatively stable and highly auto-correlated, there is little cross-time variation to be captured (almost 80 percent of the variance is cross-national). The data also turns out to be non-stationary (\(\bar{\eta}\.99\)). The evidence presented here is therefore strictly cross-sectional.\textsuperscript{11}

With this qualification, the findings for our theoretical variables are clearly supportive of our argument. Inequality has a small positive effect on spending, while vocational training has a large positive effect. Indeed, training is by far the most important variable in terms of both substantive impact and statistical significance. Thus, a one standard deviation increase in

\textsuperscript{10} Two common controls, the size of the old and unemployed populations, have negligible effects on the results, even though these variables are strong predictors of transfers in longitudinal regressions. The reason is that whereas replacement rates are very stable in the short term, and hence fluctuate with demographic shifts, it is not generally the case that countries with large dependent populations spend more on these than countries with small dependent populations.

\textsuperscript{11} The problem of non-stationarity persists with the inclusion of country dummies (\(\bar{\eta}\.99\)).
Table 2. The determinants of government transfers in 19 OECD countries, 1980-95 (t-scores in parentheses).

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Government transfers as percent of GDP$^{(1)(8)}$</th>
<th>Earnings inequality$^{2(8)}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>4.06 (1.86)</td>
<td>4.38 (3.07)</td>
</tr>
<tr>
<td>Inequality$^{2(8)}$</td>
<td>0.44 (1.38)</td>
<td>-</td>
</tr>
<tr>
<td>Vocational training$^3$</td>
<td>0.019** (3.97)</td>
<td>-0.012** (-4.56)</td>
</tr>
<tr>
<td>Left government$^4$</td>
<td>0.10 (1.08)</td>
<td>0.03 (0.43)</td>
</tr>
<tr>
<td>Unionization$^5$</td>
<td>0.001 (0.59)</td>
<td>-0.004* (-2.76)</td>
</tr>
<tr>
<td>Trade openness$^6$</td>
<td>0.06 (1.53)</td>
<td>0.04 (1.19)</td>
</tr>
<tr>
<td>GDP per capita$^7(8)$</td>
<td>-0.28 (-1.26)</td>
<td>-0.34* (-2.00)</td>
</tr>
<tr>
<td>Adj. R-squared</td>
<td>0.6819</td>
<td>0.7319</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key: * significant at the .05 level; ** significant at the .01 level.

Notes: $^1$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) as a percent of GDP. Sources: Cusack (1991) and OECD, National Accounts (various years). $^2$The earnings of worker in the top decile of the earnings distribution relative to a worker in the bottom decile of the earnings distribution. Source: OECD, Electronic Data Base on Wage Dispersion (undated). $^3$The share of an age cohort in either secondary or post-secondary (ISCED5) vocational training. Source: UNESCO (1999). $^4$This is an index of the partisan left-right “center of gravity” developed by Cusack (1997). The index varies from 0 (extreme right) to 4 (extreme left). $^5$Union density rates. Sources: Ebbinghaus and Visser (2000). $^6$Total exports and imports of goods and services as percentage of GDP. Source: OECD, National Accounts (various years). $^7$GDP per capita. Source: Summers and Heston (1999). $^8$Log-transformed to improve fit.
vocational training is associated with a similar increase in government transfers, and the vocational training variable accounts for between 35 (if entered as the last variable) and 65 percent (if entered as the first variable) of the total variance in spending. None of the other variables comes close in explanatory power, and none are in fact statistically significant.

The regression results are summarized in Figure 6 in the form of a causal model. Note that while vocational training increases spending, it simultaneously reduces income inequality. When we remove vocational training from the regression, the effect of inequality on spending actually turns negative, which is contrary to the predictions of the Meltzer-Richard model (since an increase in inequality should shift the position of the median voter to the “left”). The inverse relationship between inequality and redistributive spending has been noted by a number of authors (see Perotti 1996; Bénabou 1996; and Moene and Wallerstein 2001), but the puzzle disappears once we include training as a control – something no other study to our knowledge has tried.

There are several possible explanations for the negative relationship between vocational training and inequality, but we leave these to be explored in future research. Here we simply note that the impact of a one standard deviation increase in training is to raise spending by a significant .74 standard deviations, taking into account both direct and indirect effects. While the findings in this section cannot be considered definitive, this result, and the close correspondence between the micro and macro evidence, therefore strongly suggests that cross-national differences in skill systems are an important source of cross-national differences in social spending. Insofar as training systems are important for the way companies compete in international systems, and since the acquisition of specific skills may presuppose income protection, there is also no reason to expect globalization to lead to convergence in social protection systems.
Figure 6. The causal relationship between vocational training, earnings equality, and government transfers.

Effect of vocational training on transfers:

Direct effect: 0.019  
Indirect effect: -0.005  
Total effect: 0.014

0.44
Earnings inequality
-0.012
Vocational training
0.019

Note: The effects of vocational training and of earnings inequality are the estimated parameters from the regression results in Table 2.

3. political representation and credible commitment

3.1. The model
As we noted above, the median voter is likely to be a worker who is employed in a job where his or her specific as well as general skills are being employed. In order to protect specific skills against the risk of technological change, or other shocks that could render these skills obsolete, the median voter will prefer a government that provides for a guaranteed level of income and benefits. What we showed in the previous section is that if the government can credibly commit to a social protection system for the future (when the current median voter may need it), the government has an incentive to provide social protection that is rising with the specificity of the median voter’s assets. If, however, the government cannot credibly commit to a future policy, then it faces a time-inconsistency problem. While the median voter wants the government to
compensate her in the event of future unemployment, and while the government has an incentive to promise such compensation, it has no incentive to carry through on its promise once the contingency arises since a future median voter would always be an employed person opposing compensation. Knowing that a future median voter would repeal a decision to spend, the current median voter has no reason to support such spending either.

The severity of the time inconsistency problem in social policy is declining in the transferability of the median voter’s assets. Those with predominantly general assets have less to fear from unemployment, and the gap between what the current median voter wants now and in the future will therefore be relatively small. For people with specific assets, by contrast, the ability of governments to credibly commit to future policies of compensation critically affects the discounted value of specific asset investments. Without a reliable insurance against loss of specific asset employability, the riskiness of investing in such assets increases the opportunity costs of not investing in general assets. An economy relying on workers with specific skills is therefore dependent on the ability of governments to credibly commit to a long-term policy of social protection. Or to phrase it in terms of $R$, without institutional mechanisms for credible commitment, a generous policy of social protection would be unlikely. A very stark conclusion that underscores the importance of political institutions.

There are three political-institutional mechanisms that can help the government solve its commitment problem. The first is the general tendency of policies, once adopted, to become irreversible. As argued forcefully by Paul Pierson (1996, 2000) the politics of welfare state retrenchment is different from the policy of welfare state expansion because cutbacks often imply concentrated costs, which tends to mobilize political opposition, whereas benefits are dispersed benefits, which tends to diffuse support. Yet, this argument is clearly dependent on the institutional context since majoritarian governments are under no compulsion to pay heed to the opposition, and there are several examples of radical policy reversals in countries such as Britain, New Zealand, and the US.
As argued by Stewart Wood (2001), the degree of hysteresis in social policy is a function of the system of representation, in particular the role of organized interests and the political party system. Starting with the former, since the root of the time-inconsistency problem is that the current median voter will have no influence on policies if he becomes part of a future unemployed minority, one solution is to give those with unemployed assets influence over the decision-making process. In practice this can be done by according interest groups direct representation in public agencies and giving them some influence over the formulation and implementation of policies. Such a system of interest representation is known as corporatism and stands in contrast to pluralist systems where groups are denied direct access to the public policy-making process, and where these have to compete for the attention of the government.

We show formally in Appendix B that corporatist institutions lead to greater investment in specific assets than pluralist institutions if corporatism produces public policies that pay more attention to the interests of those with unemployed assets. The intuition is simple. Workers with unemployed assets always have an interest in high protection, and greater policy-making weight to these interests therefore raises spending levels. We also show that corporatist institutions would be chosen by those with specific assets if these institutions were subject to a majoritarian vote. This follows simply from the fact that by choosing corporatism, specific asset holders are getting protection for their investments (overcoming the time-inconsistency problem), whereas this is not the case if pluralism is chosen. The choice over institutions is therefore logically equivalent to the choice over protection levels, and we know from the analysis in the previous section that specific asset holders will choose a relatively high level of protection.

Several caveats to this argument need mentioning, however. First, we are not claiming that the system of interest corporatist institutions were in fact adopted through a majoritarian vote. What the argument says is that i) corporatism helps overcome a difficult social choice problem in specific asset systems, ii) this system of interest representation reduces the risks of investing in specific skills, and iii) those who make specific asset investments are likely to support the system and oppose attempts to reduce the role of organized interests in public policy making. Second,
organized groups such as unions are themselves subject to a time-inconsistency problem because
the median member in each group is likely to be someone whose assets are employed (the insider-
outsider problem). Yet, since shocks tend to have differential effects on groups, at any given
moment in time some groups are likely to be concerned about becoming unemployed in the near
future, before social policies adopted today could be repealed. Hence, although the interests of
“outsiders” will always carry less weight than “insiders,” corporatist interest representation helps
ensure that no interest is completely ignored.

A final qualification to the argument requires more detailed analysis. The problem is that although
governments in corporatist systems may find it difficult to reverse previously implemented
policies, there is nothing that compels governments to initiate new policies (although there may be
a ratchet-up effect over time). If the best short-term strategy of the governing party (or parties) is
to promise low spending and taxes, corporatist interest representation may not be sufficient to
guarantee Pareto optimal levels of social protection. Parties themselves must be credible
committed to social protection, and voters must find it attractive to vote for these parties.
Elections matter, in other words.

To see this, assume that there are two types of parties: a “responsible” kind, which we call $P_r$, that
is committed to a political program and a “populist” kind, call it $P_p$, that stays uncommitted to any
program and formulate policies on an ad hoc basis. Now distinguish between two social policies
identified above: $R=R^*$, which is the preferred long-term policy of specific asset holders; and $R=0$,
which is the preferred policy of general asset holders. For simplicity we assume that there are
only two periods, that the median voter is an employed specific skills worker, and that she has the
following preference structure:

$U(0, R^*) > U(R^*, R^*) > U(0,0) > U(R^*,0)$

Note that the first inequality embodies the idea of a time-inconsistency problem. This problem
survives in this setting because the mere availability of a populist party makes it possible for
employed workers to vote for that party in the present, “saving” their vote for the responsible party to the future (when they might need protection). Since populist parties always have an incentive to offer \( R = 0 \) this precludes \( R = R^* \) as a sustainable outcome as before.

But there is an alternative that emerges if we take account of the structure of political party organizations and the role of political campaigns. Assume that populist parties are completely leadership-dominated, and that party organizations therefore are irrelevant in policy formation, but that responsible parties have a party organization that binds the leadership to a lesser or greater extent. As is common in the party literature we assume further that the party base is policy oriented and take the party program seriously. Since the party program of responsible parties stipulates a social policy of \( R^* \), while the leadership would be tempted to offer 0 (due to the time-inconsistency problem), we can describe the actual policy of the party as

\[
R = \pi \cdot R^*,
\]

where \( \pi > 0 \) measures the weight that is accorded to the party base. The parameter \( \pi \), in other words, is an institutional constant that represents the degree of organizational commitment to the party platform. Because \( \pi = 0 \) for populist parties,

\[
R_p = 0,
\]

Finally, as in Grossman and Helpman (2001) we assume that electoral campaigns matter for the electoral performance of parties. Specifically, capturing the median voter is only a necessary, but not sufficient, condition for winning elections because some people, regardless of their interests, are swayed by parties running effective campaigns. In particular, party success in elections depends on the investment of time and money by potential supporters (in addition, of course, to the appeal of a party’s policies to potential voters). Because those who invest time and money in parties do so because they want to see the policy platform of their preferred party implemented, the investment of supporters is rising in the policy, \( \pi \cdot R^* \), and in the political influence of a party. Since in our model the support of the median voter is required to win the next election, a good predictor of future influence is whether the party won the support of the median voter in the past.
election, \( V_r(t-1) = [0, 1] \). If not, we assume that investments will not be large enough for the party to win the next election.\(^{12}\) With these assumptions, the policy outcome in second period is:

\[
R(t + 1) = V_r(t) \cdot \pi \cdot R^* + V_r(t) \cdot (1 - \pi) \cdot 0 = V_r(t) \cdot \pi \cdot R^*.
\]

\( R \) is thus a function of both the vote of the median voter in the first period, \( V_r(t) \), and the organizational commitment, \( \partial \), of the party.

The current median voter has four possible voting strategies: (i) vote for \( P_p \) in the first period and \( P_r \) in the second; (ii) always vote for \( P_r \), (iii) always vote for \( P_p \), and (iv) vote for \( P_r \) in the first period and \( P_p \) in the second. Given the preference ordering of the median voter, it never makes sense to pursue strategy (iv), and the outcome of (iii) turns out to be equivalent to (ii) (as will be evident in a moment). We therefore concentrate on comparing strategies (i) to (ii). The expected utility of voting for \( P_p \) in the first period and \( P_r \) in the second is

\[
EU_{p,r} = U_{p,|E} + V_r(t) \cdot \pi \cdot U_{p,|\bar{E}}.
\]

where the subscript is the policy of the chosen party given the employment situation of the median voter (employed in the first period and uncertain, \( \bar{E} \), in the second). From (6) and (7), (8) can be written as

\[
EU_{p,r} = U_{0|E} + V_r(t - 1) \cdot \pi \cdot U_{R^*|\bar{E}} = U_{0|E}
\]

Note that because the current vote of the median voter undermines the future influence of the party, strategy (i) (vote for \( P_p \) in the first period and \( P_r \) in the second) is equivalent to a strategy of always voting for \( P_p \).

The expected utility of always voting for \( P_r \) is

\[^{12}\text{We could relax this assumption so that the probability of winning is a rising function in the level of investment, but it will not change our conclusions.}\]
The voting rule for the current median voter is now to vote for $P$, if and only if:

$$EU_{p,r} = U_{R^p|r} + \prod U_{R^q|q} + (1 - \prod) U_{0|q}$$

(10)

or

$$EU_{r,r} > EU_{p,r} = U_{R^p|r} + \prod U_{R^q|q} + (1 - \prod) U_{0|q} > U_{0|E}$$

(11)

$$\prod > (U_{0|E} - U_{R^q|q}) / (U_{R^q|q} - U_{0|q})$$

(12)

The expression is always positive, and the larger $\delta$ is, the more likely the inequality will be satisfied. Responsible and programmatic parties with tightly coupled party organizations are thus more likely to attract specific skills voters than are leadership-dominated parties. Also note that when $\delta$ is low relative to the portability of voters’ assets, the inequality is less likely to hold because a low endowment of specific skills reduces the size of the denominator. Skills and organizational commitment thus interact, with credible commitment very difficult in general skills countries. And when commitment capacity is low, the incentives of workers to invest in specific skills in the first place is undermined.

There are thus two empirical implications of our argument. At the micro-level we expect voters with specific skills to be more likely to vote for responsible and programmatic parties than voters with general skills. A corollary is that since political parties with different organizations attract voters with different skills, the skill composition of party voters also varies systematically. At the macro-level we expect that in electoral systems where parties have high capacity for commitment, workers should be more prone to invest in specific assets. The same is the case in corporatist systems interest representation, and it is reasonable see specific asset investments as a function of both features of the representational system. The next section explores these hypotheses empirically.
3.2. The evidence

Micro-level.

The evidence in this section combines the ISSP data used before with Lane and Erson’s (1994) classification of party organizations according to the extent of organizational integration and programmatic orientation. The two variables, which we have combined into a single “institutionalization” index measure the extent to which parties have strong political organizations bound by detailed party programs as opposed to weak organizations with a high level of policy flexibility for elected leaders. The measure is intended to capture our distinction between responsible and populist parties, and is used as a proxy for $\delta$. Asset specificity of party voters, in turn, is measured by the specific skill variable, $s$, introduced in the previous section.

Unfortunately, the country overlap between the two datasets is limited, leaving us with only six countries and 26 parties. Still, at the individual level we have a large number of observations that allow us to test whether voting behavior is affected by peoples’ skills and the organization of parties. The prediction is that the probability of voting for parties that offer high social protection is rising in the institutionalization of those parties and in the skill specificity of voters.

To test this hypothesis we ran a multinominal regression for each country using $s\delta$ as one of the explanatory variables, and including the same set of controls as in the regression model used to predict social policy preferences. In each of the 6 cases, the fit of the model is better using the interaction term $s\delta$ than using $s$ alone, and in every case the parameter for $s\delta$ is significant at a .01 level or better. Because we are only interested in the effects of skills and institutionalization, and because the raw results of logistic regressions are difficult to interpret, Table 3 only shows the probability of voting for the main left party in each country as a function of the two key variables. All the other variables in the regressions were kept at their means. The assumption is that left parties are offering generous social protection that people are more likely to support when their skills are specific and institutionalization is high.
Table 3. The probability of voting for the main left party in six countries as a function of skill profile and institutionalization of party.\(^1\)

<table>
<thead>
<tr>
<th>Institutionalization ((\delta)^{2})</th>
<th>Skill profile ((s)^{2})</th>
<th>Low s</th>
<th>High s</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Britain</td>
<td>37</td>
<td>51</td>
<td>14</td>
</tr>
<tr>
<td>Low</td>
<td>France</td>
<td>0</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Low</td>
<td>Germany</td>
<td>17</td>
<td>48</td>
<td>31</td>
</tr>
<tr>
<td>Low</td>
<td>Ireland</td>
<td>15</td>
<td>27</td>
<td>12</td>
</tr>
<tr>
<td>Low</td>
<td>Norway</td>
<td>13</td>
<td>49</td>
<td>36</td>
</tr>
<tr>
<td>Low</td>
<td>Sweden</td>
<td>6</td>
<td>61</td>
<td>55</td>
</tr>
<tr>
<td>Low</td>
<td>Mean</td>
<td>15</td>
<td>41</td>
<td>26</td>
</tr>
<tr>
<td>High</td>
<td>Britain</td>
<td>38</td>
<td>52</td>
<td>14</td>
</tr>
<tr>
<td>High</td>
<td>France</td>
<td>0</td>
<td>74</td>
<td>74</td>
</tr>
<tr>
<td>High</td>
<td>Germany</td>
<td>30</td>
<td>68</td>
<td>38</td>
</tr>
<tr>
<td>High</td>
<td>Ireland</td>
<td>15</td>
<td>31</td>
<td>16</td>
</tr>
<tr>
<td>High</td>
<td>Norway</td>
<td>29</td>
<td>62</td>
<td>33</td>
</tr>
<tr>
<td>High</td>
<td>Sweden</td>
<td>40</td>
<td>83</td>
<td>43</td>
</tr>
<tr>
<td>High</td>
<td>Mean</td>
<td>25</td>
<td>62</td>
<td>37</td>
</tr>
</tbody>
</table>

\(^1\) Keeping all other variables at their means. \(^2\) The values for each variable are one standard deviation below and one standard deviation above their means.

The expectations are largely borne out, with the probability of voting for a party rising in both \(s\) and \(\delta\), and the effect of skills generally stronger when parties are highly institutionalized. Figure 7 gives a descriptive sense of this pattern by showing the bivariate relationships between the institutionalization of parties and the average specificity of skills among their voters in each of the six countries. As expected, parties with the more institutionalized party organizations also tend to attract voters with more specific skills.
Figure 7. Institutionalization of party organizations and skill composition of party voters.

Key:

<table>
<thead>
<tr>
<th>Country</th>
<th>Party</th>
<th>Label</th>
<th>Country</th>
<th>Party</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>CDU/CSU</td>
<td>CDU/CSU</td>
<td>Sweden</td>
<td>Center Party</td>
<td>CP</td>
</tr>
<tr>
<td>Germany</td>
<td>SPD</td>
<td>SPD</td>
<td>Sweden</td>
<td>Liberal Party</td>
<td>FP</td>
</tr>
<tr>
<td>Germany</td>
<td>FDP</td>
<td>FDP</td>
<td>Sweden</td>
<td>Christian Democrats</td>
<td>KDS</td>
</tr>
<tr>
<td>Britain</td>
<td>Conservative</td>
<td>CON</td>
<td>Sweden</td>
<td>Conservatives</td>
<td>M</td>
</tr>
<tr>
<td>Britain</td>
<td>Labour</td>
<td>LAB</td>
<td>Sweden</td>
<td>Social Democrats</td>
<td>SAP</td>
</tr>
<tr>
<td>Britain</td>
<td>Liberal Democrats</td>
<td>LD</td>
<td>Sweden</td>
<td>Socialists</td>
<td>VP</td>
</tr>
<tr>
<td>Norway</td>
<td>Labour Party</td>
<td>DNA</td>
<td>France</td>
<td>Communist Party</td>
<td>PCF</td>
</tr>
<tr>
<td>Norway</td>
<td>Progress Party</td>
<td>FRP</td>
<td>France</td>
<td>Socialist Party</td>
<td>PS</td>
</tr>
<tr>
<td>Norway</td>
<td>Conservatives</td>
<td>H</td>
<td>France</td>
<td>UDF</td>
<td>UDF</td>
</tr>
<tr>
<td>Norway</td>
<td>Christian Democrats</td>
<td>KrF</td>
<td>France</td>
<td>RPR</td>
<td>RPR</td>
</tr>
<tr>
<td>Norway</td>
<td>Center Party</td>
<td>SP</td>
<td>Ireland</td>
<td>Fianna Fail</td>
<td>FF</td>
</tr>
<tr>
<td>Norway</td>
<td>Socialist Left</td>
<td>SV</td>
<td>Ireland</td>
<td>Fine Gael</td>
<td>FG</td>
</tr>
<tr>
<td>Norway</td>
<td>Liberal Party</td>
<td>V</td>
<td>Ireland</td>
<td>Labour</td>
<td>LAB</td>
</tr>
</tbody>
</table>
The relationship between party organization and voting suggest an interesting institutional design problem since strong party organizations comes at the cost of lower flexibility for the elected leadership. A consequence of entrenched party organizations is therefore to reduce the capacity of the party to take advantage of electoral opportunities as they arise. Given this trade-off, parties that are appealing to voters with highly specific asset endowments, with a preference for credibly committed parties, will have a greater incentive to develop strong party organizations than parties appealing to voters with highly portable asset endowments, who have less reason to worry about future protection against unemployment.

As with corporatism and electoral rules, we are not necessarily claiming that party organizations are adopted strategically to fit the broader political economy. Given the resilience of all these institutions, most of the effect probably runs in the opposite direction so that institutional capacity for commitment – a function of both the interest representation system and the electoral system – is conducive to investments in particular types of assets, while party organizational structures are likely to attract particular types of voters. To us, the important point is the mutual reinforcement between political system and the distribution of assets, which, to our knowledge, are predicted by no other theory.

Macro-level.
A necessary condition for parties to be able to credibly commit to a policy is that elected leaders have individual incentives to run their election campaigns on the basis of the policy platform of the party rather than own personal resources and policy appeals. In a path-breaking article, Carey and Shugart (1994) have analyzed the conditions under which this is more or less likely. Confirming a long-standing intuition among students of political parties, the incentives for politicians to campaign on the party platform is critically dependent on the ability of parties to control politicians’ reelection chances.
The best known means to accomplish such control is a closed party list system where a candidate’s rank on the list determines the likelihood of reelection. In closed list systems like the Norwegian or Swedish, failure to adhere to the party platform during or after the election can severely curtail politicians reelection chances. In open list systems, such as the Finnish or the Dutch, the party controls who gets on the list, but voters can choose among the candidates on the list, thereby reducing the party’s control over who gets elected. This furnish politicians with a reason to take advantage of electoral opportunities even when these require them to deviate from the party platform. This problem, however, is magnified in systems with primaries, such as elections to the US congress, because political parties do not control who gets on the ballot. Politicians thus have incentives to run their campaigns with little regard for the party platform, although once the primaries are over and candidates face an opponent from another party the party label still carries some value. In an extreme electoral system like the Japanese (before the reforms in 1993), even this incentive to use the party label is dissipated label because an open nomination process is coupled with elections where candidates from the same party compete against each other for a single nontransferable vote. Policy differentiation, not coordination, within the party is the result.

The electoral system is thus a key determinant of whether parties have the capacity to credibly commit to a programmatic policy, and since electoral rules govern all parties in a party system, this is a feature of national political system. However, within electoral systems, parties can differentiate themselves by the extent to which they seek to impose a particular policy platform on their elected leaders (Kitschelt 1994, ch. 4), and some parties are more leader-dominated than others. Because leader-dominated parties may find it more difficult to credibly commit, such domination should in principle be measured as a separate variable and combined with data on electoral systems. However, no comparative data exist that would allow us to combine data on electoral systems with leadership dominance, and we therefore have to restrict our macro-analysis to the effects of electoral systems. It should be kept in mind, however, than in some countries with electoral systems with high capacity for party discipline, leaders may control parties to such
an extent that policies reflect leader preferences more than party programs. The modern British party system comes to mind as an example.

Table 4 shows the classification of electoral systems according to the incentives of politicians to campaign on the platform of their parties. Higher numbers indicate greater incentives to toe the party line. The classification follows Carey and Shugart’s for the 18 countries we used in the previous analysis, with a few qualifications. First, Carey and Shugart only distinguish between open and closed list systems, but as Cox (1997) points out, many countries have “flexible” list systems where the voter can cast a vote for both individual candidates and for the list as a whole. In these systems voters have some capacity to “break” the list, but the party retains considerable control over who receives the list votes and hence who gets elected (Cox 1997, 61). In practice, flexible lists systems function very similarly to closed lists systems, and we have ranked them just below closed lists systems in terms of the incentives they create for politicians to campaign on a party platform as opposed to other appeals.

Second, we do not think that open lists can be unambiguously ranked below single member plurality systems as Carey and Shugart do. Their justification for doing so is that the party in SMP systems controls the list, whereas in open lists systems the voter has discretion over who on the list is picked. Yet, in SMP systems the total number of listed candidates is large – potentially as large as the number of seats in the legislature – and each candidate has to appeal to local constituencies where strict adherence to the party platform are often not conducive to electoral success. By contrast, larger districts in open list systems create greater competition for a smaller number of nominations, thereby increasing the leverage of the party leadership. On the other hand, open lists generates competition between candidates from a single party that are absent under SMP voting. It is unclear which of these effect dominates, and we therefore rank the two systems the same. We have done the same for run-off majority systems (France) because, as Carey and Shugart acknowledge, the incentives are only marginally different from SMP systems. The rest of the classification follows Carey and Shugart’s scheme.
Table 4. Electoral systems and incentives of politicians to campaign on the party platform

<table>
<thead>
<tr>
<th>Electoral system</th>
<th>Countries</th>
<th>Incentives to campaign on party platform (rank score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closed list</td>
<td>Norway, Spain, Sweden</td>
<td>6</td>
</tr>
<tr>
<td>Flexible lists</td>
<td>Denmark, Germany, Greece, Italy, Austria, Belgium, Switzerland</td>
<td>5</td>
</tr>
<tr>
<td>Single member district plurality</td>
<td>Britain, Canada, New Zealand</td>
<td>4</td>
</tr>
<tr>
<td>Single member district majority with run-off</td>
<td>France</td>
<td>4</td>
</tr>
<tr>
<td>Open lists</td>
<td>Finland, Netherlands</td>
<td>4</td>
</tr>
<tr>
<td>Single transferable vote, party endorsements</td>
<td>Australia, Ireland</td>
<td>3</td>
</tr>
<tr>
<td>Primary system</td>
<td>United States</td>
<td>2</td>
</tr>
<tr>
<td>Single non-transferable vote, open endorsement</td>
<td>Japan (pre-1993)</td>
<td>1</td>
</tr>
</tbody>
</table>

*Source: Adapted from Carey and Shugart (1994).*

Turning to corporatism, we follow Schmitter’s conceptualization and include both the capacity of interests groups to aggregate and articulate demands on behalf of their members (“intermediation”), and the coordination of demands between groups and public authorities (“concertation”) matter. Numerous attempts have been made to further decompose and combine these dimensions, and we rely on the most recent and comprehensive effort by Siaroff (1998) whose composite index is listed in Table 5 along with the electoral system. To get a composite measure of institutional capacity for commitment, we have simply taken the sum of the two measures after standardization.
Table 5. Political Institutions and rate of vocational training

<table>
<thead>
<tr>
<th>Country</th>
<th>(1) Corporatism index</th>
<th>(2) Incentives to campaign on party platform</th>
<th>(3) Institutional capacity for commitment</th>
<th>(4) Rate of vocational training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>4.6</td>
<td>6</td>
<td>1.5</td>
<td>37</td>
</tr>
<tr>
<td>Sweden</td>
<td>4.5</td>
<td>6</td>
<td>1.5</td>
<td>36</td>
</tr>
<tr>
<td>Austria</td>
<td>4.4</td>
<td>5</td>
<td>1.4</td>
<td>22</td>
</tr>
<tr>
<td>Finland</td>
<td>4.0</td>
<td>5</td>
<td>1.3</td>
<td>37</td>
</tr>
<tr>
<td>Switzerland</td>
<td>3.9</td>
<td>5</td>
<td>1.3</td>
<td>31</td>
</tr>
<tr>
<td>Denmark</td>
<td>3.8</td>
<td>5</td>
<td>1.3</td>
<td>53</td>
</tr>
<tr>
<td>Netherlands</td>
<td>3.6</td>
<td>5</td>
<td>1.3</td>
<td>34</td>
</tr>
<tr>
<td>Belgium</td>
<td>4.0</td>
<td>4</td>
<td>1.2</td>
<td>32</td>
</tr>
<tr>
<td>Japan</td>
<td>3.8</td>
<td>4</td>
<td>1.2</td>
<td>43</td>
</tr>
<tr>
<td>Germany</td>
<td>1.8</td>
<td>6</td>
<td>1.1</td>
<td>25</td>
</tr>
<tr>
<td>Australia</td>
<td>2.0</td>
<td>5</td>
<td>1.0</td>
<td>35</td>
</tr>
<tr>
<td>Ireland</td>
<td>2.0</td>
<td>4</td>
<td>0.9</td>
<td>28</td>
</tr>
<tr>
<td>Italy</td>
<td>1.9</td>
<td>4</td>
<td>0.9</td>
<td>7</td>
</tr>
<tr>
<td>France</td>
<td>2.4</td>
<td>3</td>
<td>0.8</td>
<td>9</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1.5</td>
<td>4</td>
<td>0.8</td>
<td>5</td>
</tr>
<tr>
<td>USA</td>
<td>1.5</td>
<td>4</td>
<td>0.8</td>
<td>11</td>
</tr>
<tr>
<td>Spain</td>
<td>2.1</td>
<td>3</td>
<td>0.7</td>
<td>9</td>
</tr>
<tr>
<td>UK</td>
<td>3.8</td>
<td>1</td>
<td>0.7</td>
<td>16</td>
</tr>
<tr>
<td>Canada</td>
<td>1.9</td>
<td>2</td>
<td>0.5</td>
<td>3</td>
</tr>
</tbody>
</table>

Correlation with rate of vocational training 0.66  0.58  0.81

Note: Calculated as the log of the sum of (1) and (2) after standardization.

Figure 8 shows the relationship between the rate of vocational training – the variable used in the previous section as a indicator of skill specificity – and the measure of institutional capacity for commitment. As expected, there is a strong bivariate relationship with a familiar clustering of Anglo-Saxon countries at one end and Continental European countries at the other (with France in a somewhat precarious intermediate position). It is also notable that Japan is much closer to the Anglo-Saxon cluster than to the continental European cluster. In additional to low institutional
capacity for commitment, the Japanese welfare state is underdeveloped, and both would tend to lead to under-investment in specific skills. In the Japanese system, however, extensive training in firm-specific skills, which is not fully captured by the UNESCO educational categories, is made possible by very high job security and protection of future earnings for skilled workers at the firm level.

Figure 8. Institutional capacity for commitment and the rate of vocational training.

Building on the causal path analysis in the section on social protection, we can now put vocational training on the lefthand side of the equation and use institutional capacity for commitment as one of the explanatory variables (see Table 6). To control for the possible effect of cross-national differences in the resources committed to secondary education, we have included a variable
measuring per student spending. The first column of Table 6 confirms the bivariate relationship between the rate of training and institutional capacity for commitment, and the relationship remains strong when we control for government transfers (second column). Finally, using institutional capacity for commitment as one of the predictors of government spending (third column), we can complete the causal path analysis from the previous section (see Figure 9). As before, the numbers associated with each arrow are the normalized regression coefficients. In the figure we have assumed that government transfers encourage investment in specific skills, even as some of the effect undoubtedly runs in the opposite direction (as such investments in turn raises demand for protection). Under this assumption, a one standard deviation increase in the institutional capacity for commitment is associated with an increase in the rate of vocational training by .95 of one standard deviation. If the causality between government transfers and vocational training runs in the opposite direction, institutional capacity only has a direct, and hence total, effect of .73. The true effect is somewhere in between these numbers.

---

13 We would have liked to distinguish spending on secondary vocational schools compared to other spending, but such a breakdown is not available.
Table 6. The determinants of vocational training activity in 18 OECD countries, 1980-95 (t-scores in parentheses).

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Vocational training(^1)</th>
<th>Government transfers as percent of GDP(^2(9))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-13.96 (0.11)</td>
<td>7.55 (2.46)</td>
</tr>
<tr>
<td></td>
<td>-223.17 (-1.74)</td>
<td></td>
</tr>
<tr>
<td>Institutional capacity for commitment(^3(9))</td>
<td>46.68 (3.24)</td>
<td>0.43 (1.55)</td>
</tr>
<tr>
<td></td>
<td>36.89 (3.12)</td>
<td></td>
</tr>
<tr>
<td>Government transfers as percent of GDP(^2(9))</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>27.88 (2.81)</td>
<td></td>
</tr>
<tr>
<td>Per student spending on secondary education(^4)</td>
<td>4.06 (0.25)</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-0.19 (-0.02)</td>
<td></td>
</tr>
<tr>
<td>Left government(^5)</td>
<td>4.47 (0.64)</td>
<td>-0.12 (-0.75)</td>
</tr>
<tr>
<td></td>
<td>8.16 (1.44)</td>
<td></td>
</tr>
<tr>
<td>Unionization(^6)</td>
<td>-0.12 (-0.85)</td>
<td>-0.00 (-1.09)</td>
</tr>
<tr>
<td></td>
<td>-0.12 (-1.09)</td>
<td></td>
</tr>
<tr>
<td>Trade openness(^7)</td>
<td>-0.86 (-0.31)</td>
<td>0.08 (1.33)</td>
</tr>
<tr>
<td></td>
<td>-3.32 (-1.42)</td>
<td></td>
</tr>
<tr>
<td>GDP per capita(^8(9))</td>
<td>-4.65 (-0.23)</td>
<td>-0.61 (-1.78)</td>
</tr>
<tr>
<td></td>
<td>16.07 (0.91)</td>
<td></td>
</tr>
<tr>
<td>Adj. R-squared</td>
<td>0.5218</td>
<td>0.7018</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>0.2718</td>
</tr>
</tbody>
</table>

Key: * significant at the .05 level; ** significant at the .01 level (two-tailed tests).

Notes: \(^1\)The share of an age cohort in either secondary or post-secondary (ISCED5) vocational training. \(Source: \) UNESCO (1999). \(^2\)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) as a percent of GDP. \(Sources: \) Cusack (1991) and OECD, \(National Accounts\) (various years). \(^3\)Average (after standardization) of Siaroff’s (1998) corporatism index and Carey and Shugart’s (1994) classification of electoral systems. \(^4\)Spending per student in secondary education (US dollars converted using PPPs) on public and private institutions (based on full-time equivalents). \(Source: \) OECD, \(Education at a Glance. \) CD Rom. \(^5\)Index of the partisan left-right “center of gravity” developed by Cusack (1997). The index varies from 0 (extreme right) to 4 (extreme left). \(^6\)Union density rates. \(Sources: \) Ebbinghaus and Visser (2000). \(^7\)Total exports and imports of goods and services as percentage of GDP. \(Source: \) OECD, \(National Accounts\) (various years). \(^8\)GDP per capita. \(Source: \) Summers and Heston (1999). \(^9\)Log-transformed to improve fit.
Alesina’s argument is also true for the whole system of open economies: there is a unique equilibrium employment rate for what we will call the world economy, *cet mult par*. But within this world equilibrium, employment in Ricardian economies will rise with government expenditure; while the equilibrium employment rate in Heckscher-Ohlin economies will be

**Figure 9. The causal relationship between vocational training, earnings equality, and government transfers.**

<table>
<thead>
<tr>
<th>Effect of institutional capacity on training:</th>
<th>Government transfers</th>
<th>Institutional capacity for commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct effect: 0.73</td>
<td></td>
<td>0.43</td>
</tr>
<tr>
<td>Indirect effect: 0.22</td>
<td></td>
<td>0.52</td>
</tr>
<tr>
<td>Total effect: 0.95</td>
<td></td>
<td>0.73</td>
</tr>
</tbody>
</table>

**Note:** The effects of vocational training and of earnings inequality are the normalized parameters from the regression results in Table 6.

### 4. Partisanship and the macroeconomy

In this section we show how the macroeconomic policy implications of Heckscher-Ohlin and Ricardian economies differ. In doing so we take one example from the political science literature, the Hibbs-Alesina debate. Although this debate concerned open economies, Alesina’s widely accepted argument - that there was a unique equilibrium level of unemployment in an economy, so that government expenditure could not permanently influence employment as Hibbs had claimed - is only generally true of a closed economy. For open economies, as we will show, Alesina’s argument is true of Heckscher-Ohlin but not of Ricardian economies.  

---

14 Alesina’s argument is also true for the whole system of open economies: there is a unique equilibrium employment rate for what we will call the world economy, *cet mult par*. But within this world equilibrium, employment in Ricardian economies will rise with government expenditure; while the equilibrium employment rate in Heckscher-Ohlin economies will be
4.1. The model

Start by considering a world of Ricardian economies. A Ricardian economy has advantages in producing a particular set of goods which other economies can only produce at a higher cost. A common interpretation of this is that “Ricardian goods” require specific factors of production, of which the primary example in advanced economies is specific skills, frequently embedded in long-term relations between employees and employers or groups of employers. This is therefore a world in which, with no restrictions on trade, each economy specializes in their particular range of goods.

A key point in the argument in this section is that - since there are consumers round the world who want these goods - the economy faces a downwards sloping demand curve. Prices cannot be raised so high that higher cost producers in other economies would be enticed into the market, but there will be some leeway. By contrast in a Heckscher-Ohlin economy, there is no such leeway: world prices are fixed and each Heckscher-Ohlin economy faces a horizontal demand curve for the products it is producing.

Here is the intuition of the counter-Alesina argument. Return to our Ricardian economy, and start in equilibrium with $e^S = e^D$. Now imagine that the government increases public expenditure, and that this expenditure falls on the sheltered sector. This implies a shift of employment from the traded goods sector, and, if the real wage rises, an increase in the supply of labor which is positively related to the real wage. Will the real wage rise as a result of the increased public sector demand? In the Heckscher-Ohlin model it cannot, because export prices are fixed by world markets so that with perfect competition the factor price equalization theorem prevails; the real wage cannot be altered: were it to rise the traded sector would be able to sell nothing.

But in the Ricardian economy, the rise in money wages leads to a rise in export prices for the reason seen above. Thus money wages rise relative to world prices and hence the consumer price invariant with respect to government expenditure. This will also be shown in this section.
level. The real wage therefore increases. The increase in the real wage raises the supply of labor, so that equilibrium employment is increased. No such effect is possible under Heckscher-Ohlin assumptions. If left governments care more about employment and real wages (and less about profits) than right governments, the model therefore predicts partisan effects on employment in R-V economies, but not in H-O economies.

As in the modern political economy literature in macroeconomics (Drazen 2000, Persson-Tabellini 2000), we can show the key political insights in a radically simplified model of the economy. It is easiest to do this in a world of Ricardian economies, identical except for the goods in which they specialize. In each economy, there is Bertrand competition and unit labor productivity. If $P_i$ is the price level of economy $i$, and $W_i$ the level of money wages this implies

\begin{equation}
P_i = W_i
\end{equation}

A further assumption (standard in the open economy literature) is that the consumer price index is uniform across all the economies; this follows from the assumption that utility functions are everywhere identical, and that there is no sheltered sector apart from public goods. We assume here it takes the simple form:

\begin{equation}
P = N^{-1} \sum_{i} P_i = N^{-1} \sum_{i} W_i
\end{equation}

where $N$ is the number of economies. We will only be dealing with two groups of economies, one with right-wing governments (indexed $R$) and one with left (indexed $L$); economies within each group behave identically. Since the real wage in economy $i$ is given by $W_i / P \equiv w_i$, and let $l$ be the proportion of “left” economies, so (14) implies:

\begin{equation}
l \cdot w_L + (1 - l) \cdot w_R = 1
\end{equation}
Next we derive labor supply functions in each economy. Assume workers choose to supply labor to maximize the indirect utility function \( U_i = w_i e_i - \alpha \cdot \frac{e^2}{2} \); then the labor supply curves in \( L \) and \( R \) economies are:

(16) \( e^S_L = \frac{w_L}{\alpha} \) and \\
(17) \( e^S_R = \frac{w_R}{\alpha} \)

We now turn to demand sides of \( L \) and \( R \) economies. A simple linear demand curve is assumed, so that demand for employment or output (the same because of the assumption of unit productivity) in say the \( L \) economy are equal to a proportion \( l \) of world demand for traded goods, \( a \), plus government expenditure in \( L \), \( g_L \), wholly met by employment in \( L \), less a price effect. The relative price of \( L \) goods is \( P_L/P = W_L/P = w_L \); it is assumed that the demand for output of \( L \) economies decline by \( \eta \cdot (w_L - 1) \); as can be seen from equation (3) \( w_L > 1 \Rightarrow w_R < 1 \) and vice versa, so the price effect only disappears when \( w_L = 1 \). Hence, the demand curves are:

(18) \( e^D_L = l \cdot a^* + g_L - \eta \cdot (w_L - 1) \), \\
(19) \( e^D_R = (1 - l) \cdot a^* + g_R - \eta \cdot (w_R - 1) \)

Finally for equilibrium we need:

(20) \( e^D_L = e^S_L \), \\
(21) \( e^D_R = e^S_R \)

---

\(^{15}\) We operate with competitive labor markets throughout this section so as to remain as close as possible to Alesina’s approach; but it is easy to replace this assumption with that of monopoly wage setting by unions. See Soskice and Iversen (2000) for an example of how this can be done in the class of models used in this section.
The 7 equations (3) to (9) solve the 7 unknowns \( w_L, w_R, e_L^s, e_L^d, e_R^s, e_R^d, \alpha^* \).

To show the propositions discussed at the start of the section we take the simplest case in which \( l = 0.5 \), so there are an equal number of left and right economies. Substituting (20) and (21) and (16) and (17) into (18) and (19), and subtracting (19) from (18) gives:

\[
(22) \quad e_L - e_R = \frac{g_L - g_R}{1 + \eta \cdot \alpha}
\]

and substituting (16) and (17) into (18) implies

\[
(23) \quad 5e_L + 5e_R = 1 / \alpha
\]

The two equations (22) and (23) constitute the equilibrium solution for the “world” economy and solve for \( e_L \) and \( e_R \).

Using this setup, we prove in Appendix C the following key propositions. First, consistent with the Alesina model there is a unique average equilibrium employment rate, \( 1 / \alpha \), in the world economy. The second proposition is the counter Alesina argument. If government expenditure is higher in left economies than in right, equilibrium employment in left economies will be above the world equilibrium employment rate which in turn will be above the equilibrium employment rate in right economies. The third proposition is that Heckscher-Ohlin economies have a unique employment rate independent of the level of government expenditure, so that the Alesina argument applies. In the way the model has been set up, the difference between H-O and Ricardian economies turns on whether the demand curve is downwards sloping (companies can raise prices) or horizontal (companies have to take world prices as given). Thus the Heckscher-Ohlin economy has \( \eta = \infty \). A final proposition concerns the balance of between left and right Ricardian economies. As the balance of economies become more left wing (or more right wing) so the effect on equilibrium employment of differences in government expenditure declines.
4.2. The evidence

The key testable implication of the model is very simple. Partisanship matters for real economic outcomes, but only in specific asset, or R-V, countries. We tested this proposition for 15 countries in the period 1973-93, for which we have data, splitting the sample into 7 H-O countries and 8 R-V countries based on their average rate of vocational training.\(^{16}\) We used OECD’s standardized unemployment rates as the dependent variable and the political center of gravity variable developed by Thomas Cusack (1997) as the independent partisan variable.\(^{17}\) The variable is coded so that higher values implies more leftist governments. In addition, we controlled for variables that are commonly considered important for explaining unemployment, in particular centralization of wage bargaining, the restrictiveness of the monetary regime, and their interaction (see Iversen 1999, ch 3 for details).

The results are shown in the first two columns of Table 7, using four-year period averages and panel corrected standard errors (Beck and Katz 1995). As expected there is a negative and significant effect of left governments in R-V countries but not in H-O countries (where there is a slight effect in the opposite direction). In substantive terms, the long-run effect of a one standard deviation change in left partisanship is to reduce unemployment by 2.1 percent (one standard deviation in unemployment is 3.2 percent).

An alternative specification of the model, which makes direct use of the data on vocational training, is to interact partisanship with training (column 3 in Table 7). Because we only have training data going back to 1980, the time coverage is more limited. But the substantive result is

\(^{16}\) The R-V countries are Belgium, Denmark, Finland, Italy, Germany, Netherlands, Norway, and Sweden. The H-O countries are Austria, Britain, Canada, France, Japan, Switzerland, and United States. There is a break in the training data that would add Austria, France, and Switzerland to the R-V category, but the results are similar (as will be evident from a second model specification below).

\(^{17}\) The partisan variable is based on the cabinet shares of parties, which are coded from left to right.
very similar. Thus, if the vocational training variable is half a standard deviation above its mean, the effect of a one standard deviation change in left partisanship is to reduce unemployment by 2.7 percent in the long run. The effect is reversed if the training variable is one standard deviation

Table 7. Partisanship and unemployment in 15 OECD Countries, 1973-93

<table>
<thead>
<tr>
<th></th>
<th>R-V economies (1)</th>
<th>H-O economies (2)</th>
<th>Interactive model (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>7.07***</td>
<td>-0.65</td>
<td>-8.23</td>
</tr>
<tr>
<td></td>
<td>(3.36)</td>
<td>(-0.69)</td>
<td>(-1.11)</td>
</tr>
<tr>
<td>Lagged dependent variable</td>
<td>0.47***</td>
<td>0.62**</td>
<td>0.77*</td>
</tr>
<tr>
<td></td>
<td>(3.50)</td>
<td>(4.32)</td>
<td>(4.33)</td>
</tr>
<tr>
<td><strong>Left government</strong></td>
<td>-3.95***</td>
<td>1.84</td>
<td>4.86</td>
</tr>
<tr>
<td></td>
<td>(-2.88)</td>
<td>(1.57)</td>
<td>(1.67)</td>
</tr>
<tr>
<td>Vocational training</td>
<td>-</td>
<td>-</td>
<td>0.09**</td>
</tr>
<tr>
<td></td>
<td>(2.75)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Left*training</td>
<td>-</td>
<td>-</td>
<td>-0.21**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(-3.03)</td>
</tr>
<tr>
<td>Centralization</td>
<td>-20.91***</td>
<td>8.94</td>
<td>2.94</td>
</tr>
<tr>
<td></td>
<td>(-2.92)</td>
<td>(0.47)</td>
<td>(0.33)</td>
</tr>
<tr>
<td>Mon. non-accommodation</td>
<td>-18.09**</td>
<td>2.58</td>
<td>-0.42</td>
</tr>
<tr>
<td></td>
<td>(-2.77)</td>
<td>(0.80)</td>
<td>(-0.17)</td>
</tr>
<tr>
<td>Cen*Mon</td>
<td>44.47*</td>
<td>-27.32</td>
<td>-11.09</td>
</tr>
<tr>
<td></td>
<td>(2.37)</td>
<td>(-1.43)</td>
<td>(-1.11)</td>
</tr>
<tr>
<td>OECD unemployment</td>
<td>0.35</td>
<td>0.40**</td>
<td>1.35</td>
</tr>
<tr>
<td></td>
<td>(1.79)</td>
<td>(3.17)</td>
<td>(1.55)</td>
</tr>
<tr>
<td>Trade</td>
<td>0.01</td>
<td>0.02</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>(1.00)</td>
<td>(1.62)</td>
<td>(0.26)</td>
</tr>
<tr>
<td>Adj. R-squared</td>
<td>0.77</td>
<td>0.90</td>
<td>0.76</td>
</tr>
<tr>
<td>N</td>
<td>40</td>
<td>35</td>
<td>45</td>
</tr>
</tbody>
</table>

**Key:** * significant at the .05 level; ** significant at the .01 level (two-tailed tests).

**Notes:** The measure of centralization and monetary non-accommodation is from Iversen (1999). OECD unemployment is average OECD unemployment in a given period. All other variables are as defined in Table 6.
below its mean, but it is not statistically different from zero by conventional standards. Again, partisanship matters, but only in economies with a high ratio of specific to general assets.

There are a number of broader macro-institutional implications of these findings. First, monopolistic pricing creates strong incentives for unionization, and although the gains from collective action cannot themselves explain such action, the benefits to unionization in R-V economies make it more likely that political entrepreneurs will emerge to solve them, and iteration is more likely to support cooperative behavior (paying union dues, etc.). Over time, therefore, we should tend to observe higher rates of unionization in R-V than in H-O economies, especially where facilitating structural-institutional conditions prevail, such as Ghent unemployment insurance systems, high industry concentration, and frequent left governments.

Secondly, in so far as specific skills and strong left parties increase the potential for wage pressures, wage disciplining institutions become more important to ensure good economic performance. Specific skills economies thus give rise to a second-order collective action problem the require institutional solutions, much as the time inconsistency problem in the provision of social protection led us to emphasize the capacity of governments to credibly commit.

At the core of the collective action problem is the question of how to reduce to incentives of skilled workers to fully exploit their bargaining power. We cannot address these issues in any depth here, and there is a rich literature that already does that (see Iversen and Pontusson 2000 for a recent overview). Common to most recent formulations is the emphasis on wage bargaining institutions and monetary regimes in overcoming perverse incentive problems The importance of these institutions is also reflected in our results since there are strong effects of centralization and monetary nonaccommodation among R-V countries (Table 7 column 1). These effects are also present in the full sample, but requires more complex non-linear interaction terms to show up. What is important to underscore here is that our argument and findings validate existing research on economic performance, while providing a key variable in explaining partisan effects and perhaps the origins of key institutions like unions.
5. Conclusion

The key contention in this paper is that policies, institutions, and investments in particular types of assets reinforce each other. For example, sunk investments in specific assets give economic agents a strong interest in policies and institutions that insure against the risk that these assets lose their value because technological, or other shocks, render them obsolete. Income protection (or insurance against risks more generally), and institutional capacity for commitment to such protection, in turn reduce the costs of investing in specific assets, thereby making these relatively more attractive at any given level of expected return. Since the relative abundance of specific assets is one of determinants of comparative advantage in international competition, the international division of labor will reinforce the incentives to invest in these assets.

The complementarities between assets, institutions, policies, and trade tend to push political economies towards either of two ideal types, which we have referred to in this paper as R-V and H-O economies to emphasize that the contrasting predictions of the two trade models are not mutually exclusive but spatially bound. This is nicely illustrated in the area of macroeconomic policy-making where H-O theory predicts policy neutrality, and hence no or only temporary partisan effects on unemployment, whereas R-V theory predicts a tradeoff between employment and profits, implying partisan effects. In fact, there seems to be no lasting partisan effects on unemployment in H-O economies, whereas such effects are evident in R-V economies.

By applying the same underlying micro-logic to different policy areas, and by offering supporting evidence at both the individual and aggregate levels, we hope to stimulate more research into the effects of asset specificity on policies and institutions, and how these policies and institutions in turn affect the choices individuals make over what types of assets to invest in. We believe that such research holds the key to understanding many defining aspects of democratic capitalism – including corporate governance structures, industrial policies, and education policy – that we have not considered in this paper.
Bibliography


OECD. Undated. *Electronic Data Base on Wage Dispersion*.


Appendix A:

Proof of main result in section 2

The necessary condition for optimal choice of $R$ is $V_R (R, s, g) = 0$. Totally differentiating $V_R$ gives:

\[
\begin{align*}
\alpha \cdot \left[ u''(\overline{s}g) \cdot \left( \frac{2sg}{w} - 1 \right) \cdot \left( 1 - \frac{2R}{w} \right) \cdot g + u'(\overline{s}g) \cdot g \cdot \frac{2}{w} \right] \cdot ds \\
+ \alpha \cdot \left[ u''(\overline{s}g) \cdot \left( \frac{2sg}{w} - 1 \right) \cdot \left( 1 - \frac{2R}{w} \right) \cdot s + u'(\overline{s}g) \cdot s \cdot \frac{2}{w} \right] \cdot dg \\
+ \beta \cdot \left[ u''(\overline{g}) \cdot \left( \frac{2g}{w} - 1 \right) \cdot \left( 1 - \frac{2R}{w} \right) + u'(\overline{g}) \cdot \frac{2}{w} \right] \cdot dg \\
= \left\{ \alpha \cdot u''(\overline{s}g) \cdot \left( \frac{2sg}{w} - 1 \right)^2 + \beta \cdot u''(\overline{g}) \cdot \left( \frac{2g}{w} - 1 \right)^2 + \gamma \cdot u''(R) \right\} \cdot dR
\end{align*}
\]

(1A)

Note: (i) The term in curly brackets on the RHS, which we will call $B$, is negative. (ii) We can write \((\overline{s}g - w/2) \cdot (1 - 2R/w) = \overline{s}g - \overline{w}/2\). And (iii):

\[
\begin{align*}
\left[ u''(\overline{s}g) \cdot \left( \overline{s}g - \frac{w}{2} \right) + u'(\overline{s}g) \right] \\
= u'(\overline{s}g) \cdot \left[ 1 - RRA \cdot \frac{\overline{s}g - \overline{w}/2}{\overline{s}g} \right] = u'(\overline{s}g) \cdot L(\overline{s}g)
\end{align*}
\]

(2A)

So (1A) can be written:

\[
\begin{align*}
u'(\overline{s}g) \cdot L(\overline{s}g) \cdot \alpha \cdot g \cdot ds + u'(\overline{s}g) \cdot L(\overline{s}g) \cdot \alpha \cdot s \cdot dg \\
+ u'(\overline{g}) \cdot L(\overline{g}) \cdot \beta dg = (w/2) \cdot B \cdot dR
\end{align*}
\]

(3A)

Since $dy = \alpha \cdot g \cdot ds + \alpha \cdot s \cdot dg + \beta \cdot dg$, we can further rewrite (3A) as
\[ dR = \frac{2\alpha \cdot \beta}{wB} \cdot \left[ \frac{u'(\bar{s}\bar{g}) \cdot L(\bar{s}\bar{g}) - u'(\bar{g}) \cdot L(\bar{g})}{\alpha s + \beta} \right] \cdot ds \]

(4A)

\[ + \frac{2}{wB} \left[ \frac{u'(\bar{s}\bar{g}) \cdot L(\bar{s}\bar{g}) \cdot \alpha s + u'(\bar{g}) \cdot L(\bar{g}) \cdot \beta}{\alpha s + \beta} \right] \cdot dy \]

To prove the two main results, note that in terms of (4A) \( \frac{\partial R}{\partial y} = \frac{dR}{dy} \) and \( \frac{\partial R}{\partial s} = \frac{dR}{ds} \). We show first that \( L(\bar{s}\bar{g}) < L(\bar{g}) \). From the definition in (2A), this follows if \( s > 1 \) – as is the case apart from purely general skills – and if RRA > 0. The first result is that \( \text{sgn} \frac{\partial R}{\partial y} < 0 \) if \( \text{RRA} < \frac{\bar{s}\bar{g}}{L(\bar{g}) - \bar{w}/2} \). Since \( B < 0 \), \( L(\bar{s}\bar{g}) < L(\bar{g}) \) and \( u'(x) > 0 \), this follows from (4A) if \( L(\bar{s}\bar{g}) > 0 \). This requires that \( \text{RRA} < \frac{\bar{s}\bar{g}}{L(\bar{g}) - \bar{w}/2} \). This is a sufficient condition: a necessary and sufficient condition is that the numerator of the second term in square brackets on the RHS of (4A) is positive.

The second result is that \( \text{sgn} \frac{\partial R}{\partial s} > 0 \). Since \( B < 0 \), this requires that the numerator in the first square bracket on the RHS of (5A) is negative. Since \( u'(\bar{s}\bar{g}) < u'(\bar{g}) \) from diminishing marginal utility, a sufficient condition is that \( L(\bar{s}\bar{g}) < L(\bar{g}) \), which is true so long as RRA > 0 and \( s > 1 \). So the result follows from the existence of risk aversion and specific skills.
Appendix B:
The relation between skill choices and choices of political systems

Individuals can choose between 2 types of skills S and G. There are two types of political system, PS = M (majoritarian) or = C (consensus). There are two levels of unemployment benefit, B = UB (high) or = ub (low).

1. Model I: (political system exogenous, skills endogenous). My feeling is that the critical questions all have to do with timing and exogeneity. Here is one version of the model, call it I. In this version, the political system is exogenous. The timing structure of I is as follows:

(i) The political system is given as M or C.
(ii) Individuals choose their skills, S or G, given the political system.
(iii) There is a demand shock which makes some individuals unemployed (but not the median voter).
(iv) The political system chooses the unemployment benefit rate. If PS = M, then the median voter chooses B; if PS = C B is chosen to take account of the interests of the unemployed as well as other voters.

Now a critical issue is how often the political system chooses B. The less often B is chosen, the longer the period for which it applies and the larger the proportion of the workforce who will be likely to become unemployed. I assume in this note that the pol system makes relatively frequent choices of B. It will then pay the median voter (who is employed) to choose ub under M; this is because, even if his skills are S and even though he wants UB for himself if unemployed, his voting for UB when employed will have no effect on the choice of B when he is unemployed. In other words, the pol system cannot bind its successors.

So assume, independent of whether skills are S or G, that if the political system is C, it chooses UB; if it is M it chooses ub.
Let the individual’s value function be $V(\text{skills, unemployment benefit})$. And consider the following table:

<table>
<thead>
<tr>
<th></th>
<th>C</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>$V(S, UB)$</td>
<td>$V(S, ub)$</td>
</tr>
<tr>
<td>G</td>
<td>$V(G, UB)$</td>
<td>$V(G, ub)$</td>
</tr>
</tbody>
</table>

Now make the following 2 assumptions:

**Assumption 1:** $V(S, UB) > V(G, UB)$

This means that the individual, before he has chosen between S and G at the start of the period, and therefore not knowing if he will be unemployed, will choose S if unemployment benefit is UB.

**Assumption 2:** $V(G, ub) > V(S, ub)$

This means that the individual, before he has chosen between S and G at the start of the period, and therefore not knowing if he will be unemployed, will choose G if unemployment benefit is ub.

**Result for Model I:** From Assumption 1, it pays the individual to choose S, given C; and from Assumption 2 it pays the individual to choose G given M.

In other words, if the political system is exogenous, individuals will adopt specific skills if it is a consensus pol system and general skills if it is majoritarian.
2. **Model II (skills exogenous, political system endogenous):** We continue to make all the assumptions of Model I, except that individuals have already chosen their skills at the start of the game and the political system is to be chosen. Suppose that it is chosen by a majoritarian referendum. The timing structure is now:

(i) Individual skills are given as S or G.

(ii) Given these skills there is a referendum to choose the political system as M or C.

(iii) There is a demand shock which makes some individuals unemployed (but not the median voter).

(iv) The political system chooses the unemployment benefit rate. If PS = M, then the median voter chooses B; if PS = C B is chosen to take account of the interests of the unemployed as well as other voters.

We again assume, for the same reasons as above, that if PS = M, then B is chosen as ub, while if PS = C B is chosen as UB. Assumptions 1 and 2 are maintained.

**Result for Model II:** The S-worker votes for C and the G worker will vote for M.

Hence, if individuals have specific skills (or at least if the median voter does) the C system is chosen. If individuals have general skills the M system is chosen.

3. An interesting exercise would be to put these two models together. They clearly reinforce each other. Specific skills reinforce a consensus political system, and the consensus political system reinforces specific skills. Equally general skills reinforce a majoritarian system and a majoritarian system reinforces general skills.

One way of doing this would be via an overlapping generations model. The intuition here is that as a new generation appears and has to choose between S and G, it knows that existing employees
(ie the previous generations) will choose \( PS = C \) if they have \( S \) skills and will choose \( PS = M \) if they have \( G \) skills. Thus so long as the trainee generation is smaller than the skilled generation(s), the trainee generation will be able to predict rationally that if the skilled generations are \( S \)-workers they will choose \( PS = C \); hence it will pay the trainees to choose \( S \). And mut. mut. for \( G \)-workers.
Appendix C:
Proof of the propositions in section 4

First proposition: There is a unique average equilibrium employment rate, $1/\alpha$, in the world economy, independent of the values of $g_L$ and $g_R$.

Proof: The LHS of (23) is the definition of the average employment rate in the world economy. (As can be seen from equations (15), (16) and (17), this holds for all values of $l$.)

Second proposition: When the world economy is in equilibrium, and $l = 0.5$, 
(i) $e_L > 1/\alpha > e_R \iff g_L > g_R$ and (ii) $e_L = 1/\alpha = e_R \iff g_L = g_R$

Proof: (i) (22) implies that $e_L > e_R \iff g_L > g_R$ and (23) that $e_L > 1/\alpha > e_R \iff e_L > e_R$; (ii) (22) implies that $e_L = e_R \iff g_L = g_R$ and (23) that $e_L = 1/\alpha = e_R \iff e_L = e_R$.

Third proposition: As $\eta \to \infty$ (i.e. Ricardian economies move to the Heckscher-Ohlin case), the equilibrium employment rate in equilibrium approaches $1/\alpha$ independently of $g_L - g_R$.

Proof: Follows directly from equation (22).

Fourth proposition: As $l \to 1$, $1/e_L \to 1/\alpha$ independently of $g_L - g_R$; similarly as $1 - l \to 1$, $e_R \to 1/\alpha$.

Proof: Follows directly from rewriting (23) with $l$ replacing 0.5 as $e_L = \frac{1}{l.\alpha} - \frac{(1 - l)}{l}.e_R$. 

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