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Institutional Differences and Economic Performance Among OECD Countries

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Introduction

For the past quarter century or so, economists and policy analysts have debated the efficacy of alternative institutional arrangements in advanced capitalist economies. In the 1970s some analysts declared "neo-corporatist" economies superior to others because they purportedly dealt better with inflation (Bruno and Sachs, 1985). In the 1980s many saw Japanese institutions as ideal, while others favoured the German "Rhineland" model, both of which supposedly had longer run financial perspective in capital markets than the US or UK and both of which gave greater training to ordinary workers, either on the job as part of lifetime employment or through formal apprenticeships. In the late 1980s some argued that centralized wage-setting where all-encompassing unions negotiate with employer associations worked about as well as decentralized systems (Calmfors and Driffil, 1988), leaving countries with industry level bargaining at the bottom of league tables. The late 1990s/early 2000s has been the heyday of the American model (Freeman, 2000). Persistently high levels of joblessness in many EU countries and the sluggish economic performance of Japan contributed to a growing belief that economies do better when, like the US, they rely primarily on markets and minimize institutional interventions. In fact, throughout the 1990s, and in many cases the 1980s, advanced countries have reformed their economies in market-friendly ways.

To what extent, if at all, does the evidence support the view that market-oriented (US style) economies do better than others? Or past claims that more centralized economies or those with lifetime employment do better? Are the institutional differences among advanced countries reliably related to economic performance?

These are difficult questions to answer. Economic theory does not favour one variant of capitalism over another but rather recognizes that different institutional arrangements have strengths and weaknesses, depending on market externalities, information asymmetries, and the economic environment. If transactions costs are sufficiently low, in fact, the Coase Theorem predicts that institutional arrangements will affect distribution but not efficiency. In this case, any judgement of which arrangements work better depends on the weights placed on the well-being of various groups. Since theory is ambiguous, the "war of the models" is not a battle of dueling economic wizards with their mathematical wands and

game theoretic potions. Rather, it is an empirical debate about the role institutions play in economic performance (Freeman, 1998).

But the empirics are difficult. One reason is that measuring differences in institutions among countries is fraught with uncertainty. As we shall see experts sometimes disagree about categorization of different countries along a particular institutional dimension. A second problem is that institutions potentially fit together into economic systems, so that individual features may affect outcomes differently depending on the configuration of other institutions. Some institutions may be complementary or may conflict with others. Third, institutional policies may vary over time in response to perceived economic problems or changes, muddying any observed causal link between changes in institutions and changes in outcomes. The British unions of the 2001 have different attitudes and policies than those of the 1970s, for example. Fourth, since the economic environment changes, analysts must assess the evolution of institutions as well as their impact on performance in any given period. Being flexible may be more important than operating optimally under one set of circumstances. Fifth, the small number of advanced countries and limited time series from which to make inferences provides little degrees of freedom against which to test hypotheses. As in cross-country analyses of growth, the number of possible configurations of institutions and explanatory variables potentially exceeds the number of observations (see Durlauf and Quah, 1999).

Despite these and other problems, it is important to distill what we can from the cross country evidence about the link between institutions and outcomes, if only to dispel strong claims of what will or will not happen when a country changes its institutions.

This paper explores the link between the institutional arrangements of advanced OECD countries and economic outcomes from the 1970s through 2000. Section 1 compares differences in overall economic institutions among advanced capitalist countries using measures of "economic freedom". The principal finding is that advanced country institutions have become more market friendly in the 1980s and 1990s, reducing institutional differences among them. Section 2 compares institutions in labor markets, product markets, and capital markets. It finds that these differences roughly parallel those in economic freedom, but that there is increased diversity in unionization and collective bargaining coverage over time. Section 3 assesses the cross sectional link between economic outcomes and institutions and the longitudinal link between changes in institutions and changes in outcomes. It finds only a

tenuous link that is more naturally consistent with the view that advanced capitalism permits institutional diversity than that it dictates a particular "peak" institutional form. This result for the advanced OECD countries differs sharply from identical analyses of the link between institutions and outcomes in less developed countries.

1. Aggregate Institutional Differences

The natural measuring rod for analyzing economic institutions in the aggregate is the extent to which they create a market environment close to the competitive market model. Three free market oriented think tanks – the Fraser Institute, Heritage Foundation/WSJ, and Freedom House – have tried to measure how far given economies are from their perceptions of an ideal competitive system. Each combines judgmental indicators of private property rights, freedom to operate a business, freedom of capital, free trade, etc. into single measures of "economic freedom". With a somewhat different goal, the World Economic Forum/IMD has developed a competitiveness indicator of the fitness of countries in the global market, using qualitative information on institutions and policies and quantitative measures on actual performance.

The indices have weaknesses. They are weighted linear sums of sub-indices, with the weights determined subjectively. They ignore potential complementarities or substitutions among institutions. They deal cursorily with enforcement of regulations that limit markets. And they do not pay adequate attention to the labour market institutions which dominated the 1980s-1990s debates over the war of the models. They differ in several ways among themselves (Messick, 1996; Hanke and Walters, 1997). The Fraser Institute index includes: military conscription, top marginal tax rates, transfers and subsidies, the size of government expenditure. The Heritage Foundation/WSJ index includes corporate and valued added taxes, as well as government expenditure, but ignores conscription and individual tax rates. The Freedom House index values freedom of association for workers but not taxes nor the size of government. The Fraser and Heritage measures include low inflation, which is an outcome of institutions and policies, rather than a measure of freedom in markets. Even so, the indices give a comparable picture of where countries fit along a market friendly/institutional intervention spectrum. For all countries, including the less developed

countries, Hanke and Walters show high rank correlations between the indices that range from 0.72 to 0.85 in 1995-6.

How Countries Rate in Economic Freedom and Competitiveness

Columns 1-3 of Table 1 records the scores of 23 advanced OECD countries and averages for other countries in the Fraser, Heritage/WSJ, and Freedom House indices of economies in 1995-96. The Fraser and Freedom House measures give countries with greater market freedoms higher numeric scores. The Heritage/WSJ gives them low scores. Recognizing this, there is a strong similarity in the rating of OECD countries. The top five countries in the Fraser index are: the US, UK, New Zealand, Switzerland, and (tied) Australia and Ireland. The top five in Heritage Index are: US, UK, New Zealand, Switzerland, and Netherlands. All of these, save for Australia and Ireland score the highest possible in economic freedom in the Freedom House measure. At the bottom of the Fraser index are Greece, Italy, Austria, Portugal and (tied) Sweden and Spain. At the bottom of the Heritage index are Greece, Spain, Portugal, Italy, and Sweden. While Freedom House gives Sweden its highest score, it gives the others relatively low scores for advanced OECD countries. The correlations between the ratings are high for the Fraser and Heritage/WSJ measures (.83); and lower but still significant between the Heritage/WSJ and Freedom House measures (.48) and between the Fraser and Freedom House measures (.61)

Comparing the measures for the advanced OECD countries with those for the groupings of non-OECD economies in the table shows, further, that the OECD economies form a reasonably well-defined cluster: the mean score for the advanced OECD countries is markedly higher in the relevant economic freedom metric than the mean score for all of the other groups, save the NICs, where Hong Kong and Singapore have high economic freedom scores.

An important reason for the divergence between the advanced OECD economies/NICs from the other economies is that these economies score the maximum or near the maximum in the sub indices measuring legal structure and property rights. In the Fraser index, 15 of the 22 OECD countries score a perfect 100 in legal structure/ property rights; 6 score 90 or better, and only Greece scores relatively low, 75. By contrast, exclusive of the NICs, no other country has a perfect score on the legal structure/property rights sub

index. The pattern suggests a hierarchical relation between institutions and economic well-being: property rights and market transactions are necessary though perhaps not sufficient to attain advanced country level success.

Column 4 gives the World Economic Forum/IMD competitiveness ranking of OECD countries in1996[1]. Because this index includes measures of actual economic performance and such factors as education and training of workers on which EU and Nordic countries do relatively well in addition to the market friendliness of economic institutions, it differs from the freedom indices.[2] Denmark, for instance, is 3rd among the countries in the table, and Sweden is 7th and Germany 8th.[3] As a result the correlations between the competitiveness rank and the indices of economic freedom are much lower than the correlations among those indices. The correlations of the competitiveness rank are 0.52 with the Fraser index; 0.52 with the Heritage index; and 0.55 with the Freedom House index. Column 5 gives the competitiveness scores for 1999. It shows considerable changes in a brief period of time, with the English-speaking countries of Australia, Ireland, UK, and Canada rising sharply while Denmark, Germany, Japan, Norway fall. This reflects the perceived as well as actual short term performance of these economies, rather than major institutional changes. By mixing performance and social policies with market institutions, the competitiveness scores are less appropriate for our analysis than the economic freedom indices; and I shall exclude it from further analysis.[4]

[1] The World Economic Forum ranks more countries. I have taken the rankings of OECD countries and re-ranked them, leaving out other countries.

[2] In 1990 the World Economic Forum/IMD used 326 criteria to measure competitiveness, mixing quantitative data and qualitative assessments by managers within countries.

[3] In its 1990 rating the World Economic Forum put Germany number 1 and Japan number 2 while scoring the UK and New Zealand 12th and 13th behind Sweden and Austria at 10th and 11th.

[4] The 1999 competitiveness report distinguishes micro competitiveness from the broader competitiveness indicator. The index of micro competitiveness would seem to be closer to the economic freedom index, but it also brings in factors beyond the degree to which an economy operates closely to the competitive mode, and is more weakly correlated with the freedom indices than the overall competitiveness measure: correlations of 0.44 with Fraser, 0.50 with Heritage, 0.50 with the Freedom House indices for 1996.

Changes over time, Fraser Institute Index, 1970-1997

The most useful index for assessing changes over time in the market orientation of countries is the Fraser Institute index. This index extends back to 1970, while the Heritage/WSJ index began in 1995 and the Freedom House index is available only in 1996. Table 2 gives the Fraser indices for advanced OECD countries from 1970 to 1995, by the five year intervals in which the Institute reported it, and for 1997. From 1970 to 1975 this measure shows a decline in economic freedom in all countries but the US and Sweden – the result of governments' struggle to control the oil price rise induced inflation. Since the US introduced wage and price controls in this period, a market freedom measure that paid greater attention to the labor market would have lowered the US score as well.[5] From the 1980s through 1997, the economic freedom scores rise, reflecting market-oriented reform in the advanced world. Some countries, such as the United Kingdom and New Zealand, made major changes in their institutions in this period, and rise from the mid or lower ranks of countries to the top of the economic freedom index scales. In 1975, the UK ranked 33rd among the countries in the table. In 1997, the UK stood second to the US among the countries covered. By contrast, Germany, France, and Italy increased their economic freedom scores slowly and fall in relative position. With a maximum value of 100 for the index, the trend almost necessarily reduces any measure of institutional variation. The coefficient of variation in the index in fact fell from 0.19 in 1975 to 0.05 in 1997, with much of the drop occurring between 1985 and 1990[6]

[5] The Fraser index did not include a measure of wage-setting in its earliest ratings, though it added one later.

[6] I also calculated correlation coefficients between the Fraser index scores between the specified years. The resultant correlations are given below:

	1995	1990	1985	1980	1975
1990	.78				
1985	.59	.84			
1980	.52	.76	.95		
1975	.39	.72	.86	.92	
1970	.38	.66	.80	.89	.88.

The correlation between adjacent years is quite high, varying form 0.78 (19990-1995) to 0.95 (1980-1985). But the correlation between the 1970 and 1995 economic freedom scores being 0.38, implies less stability over the long run.

2. Institutions Governing Particular Markets

An alternative approach to measuring institutions is to focus on the institutional structure of particular markets. Given the widespread belief that unions, unemployment insurance, and other labour institutions and policies are key determinants of wage inflation and unemployment, many analysts have developed measures of those institutions. As of 2001, there were at least 11 different indices of the centralization or coordination of wage-setting institutions (OECD, 1997; Elmeskov, Martin and Scarpetta, 1998) and several measures of employment protection regulations. Outside of the labour market, the OECD has developed a regulatory data base to measure the extent of interventions in product markets while corporate finance scholars have developed indices of the ease of entry into markets (Djankov, La Porta, Lopez-de-Silanes, and Shleifer, 2000), the degree to which the law protects investors in firms, and the like (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1999).

To what extent are these diverse measures of the institutions governing particular markets consistent with each other? How correlated are they with the aggregate indicators of economic freedom? Do these indicators show a pattern of convergence over time toward more market-based outcomes consistent with the aggregate indices?

Labour market institutions

The labour market is possibly the most idiosyncratic market in modern capitalist economies. Union movements, employer associations, and government regulations vary widely across countries and also vary over time within a country. Many analysts have sought to explain differences in economic performance across countries in terms of differences in labour market institutions (for example, Tarantelli, 1986; Bruno and Sachs, 1985; Calmfors and Driffil, 1988; Freeman, 1988 and OECD, 1997). To do this, they have developed ratings of country wage-setting institutions and employment protection legislation, and have estimated union density and collective bargaining coverage.

Table 3 shows how 11 different analysts ranked countries by their degree of centralization of wage-setting from the early 1980s to the mid 1990s. In this table a high number means that the analyst regards the wage setting system as highly centralized while a low number means that the analyst regards the system as decentralized. The ratings are not, it

is important to recognize, purely subjective. Most analysts built their rankings from a limited number of "facts"(such as whether there is a central union negotiating body, whether there is one peak federation or many, etc). Indeed, several of the rankings give ties to the countries because these building block facts gave similar numbers to the countries. Still, there is subjectivity in the building blocks chosen and, perhaps more importantly, in the equal weights that analysts accord them in aggregating to a single statistic, just as there is in the freedom indices. The multiple ratings for particular countries over time allow us to examine the consistency of these measures in any time period as well as to assess changes over time.

Consider first consistency within periods. In general, different analysts rate countries similarly in the same time period – the US for instance is always among the most decentralized countries while Sweden and Norway are among the most centralized. The correlation between the rankings within the early 1980s is 0.90; that for 1986 is 0.69; that for 1991 is 0.75. But there are some striking differences in the placing of particular countries over time, which can affect claims about the relationship between wage-setting and economic outcomes. One such difference is in the different rank of France and Japan in the two assessments in 1984, which produces a low within-period correlation of 0.24. What is going on here? The 1984 ranking in the third column by Camerson is based on his assessment of the internal structure of the unions, while the ranking by Lembrucht in the next column is based on his assessment of the influence of unions on policy formulation. Lembrucht rates France as highly centralized while Cameron rates it as decentralized. Which representation best fits French wage-setting? The issue in part hinges on how important the SMIC is in determining overall wage patterns, since the SMIC is centrally determined. Most analysts place France in the more decentralized camp, making Lembrucht's categorization the minority view.

As for Japan, there is disagreement in each period on where Japan fits in the centralization/decentralization ladder. In the late 1980s measures, for example, we see that analysts differ about the rank of Japan just as Lembrucht and Cameron did in the early 1980s rankings. When Japan was doing exceptionally well, its place in the ordering of countries was important in reaching any conclusion about the link between centralization and outcomes. Call Japan wage-setting largely market-determined and that group of countries looked better. Call Japan an institutional wage-setter and those countries looked better. As Japan has some features that place it in the market wage-setting camp (plant level unions,

firm-based bonuses, no centralized bargaining) and some features that put it in the institutional wage-setting camp (the Shunto offensive, the role of Nikkairen in formulating employer wage policy, and extraordinarily narrow dispersion of wage settlements), there is no easy resolution to this disagreement The weakened performance of Japan in the 1990s makes the rating of Japan in the wage determining scales less critical than it was in earlier decades. There are other oddities in the indices. Given the importance of the Scala Mobile in wage-setting in Italy, the general agreement among analysts that Italy was one of the most decentralized wage-setting countries strikes me as bizarre. During its hayday the Scala Mobile reduced dispersion of pay nearly as much in Italy as centralized bargaining did in Sweden (Ichino and Erickson, 1995 and Manacorda, 1999). The focus of the indices on the characteristics of union and management bargaining gives a misleading picture of the extent to which wages were centrally determined.

Some countries changed their ranking in centralization of wage-setting in the period covered. The UK moved from a largely collectively bargained system of wage-setting to a largely market determined system. New Zealand follows a similar pattern. But rankings can only tell us about changes in relative position. The final column in the table gives absolute changes in centralization of wage-setting as reported by Elmeskov, Martin, and Scarpetta (1998). They code countries from 1 (decentralized wage setting) to 3 (coordinated or centralized) and specify periods of change. Eight countries change their wage-setting stance in the period they covered., with five moving towards less centralized institutions while the Netherlands, Ireland, and Italy moved in the opposite direction pattern. I disagree with the Elmsekov et al reading of the Italian pattern also, on the grounds that Italy became less centralized in wage-setting when it abandoned the Scala Mobile in the early 1990s, whereas they have Italy moving from decentralized to centralized in this period.

Table 4 turns from experts' rating of countries by the centralization of their wage-setting to more objective measures of union density and collective bargaining coverage in 1980 and 1997 (with some coverage figures for 1994). The table shows much higher collective bargaining coverage than union density in several countries. France is the most striking case in point, with union density of 22% in 1980 and 10% in 1997 compared to levels of coverage of 85% (1980) and 95% (1994). The cause of the huge divergence, are mandatory extension laws that extend union contracts to non-union workplaces.

I have grouped the countries in the exhibit into four rough categories, depending on how density and coverage changed. Overall density fell in 12 countries, was roughly stable in 5 countries, and rose in just 3 countries. As a result the unweighted density dropped noticeably in the near two decades covered. But this drop did not translate into a comparable fall in collective bargaining coverage. Coverage fell in just five countries and was roughly stable in all the others countries. In contrast to the convergence in institutions in the Fraser freedom index and in the measure of centralization of wage-setting, both the density and coverage figures show divergence over time. The coefficient of variation of density rises from 0.41 to 0.59 while the coefficient of variation of coverage rises from 0.30 to 0.39. Overall, the pattern of change in coverage suggests that there are two attractors operating in "institution space" – one with near 100% coverage and another with near 0% coverage. It is not difficult to develop an argument as to why union-management relations should produce such multiple equilibria (Freeman, 1998).

Some advanced OECD countries like Spain, Portugal or Italy make it difficult to lay off workers with permanent contracts, which presumably reduces hiring as well. German and Belgium laws make it difficult to hire temporary labor. Virtually all EU countries with works councils require management to consult with workers about plant closings, which invariably delays closures and increases their cost. Employment protection policies effectively shift the property rights of a job from management to the incumbent worker. This will have no effect on resource allocation as long as transactions costs are small, but will affect employment and unemployment when transactions costs are relatively high.

Table 5 records ratings of the strictness of the EPL regulations in the late 1980s and late 1990s by the OECD and in 1990 and 1998 by Nicoletti et al, (1999). The scores given to the regulations are scaled so that low values (minimum of 0) imply little employment protection while high values (maximum of 6) imply considerable employment protection. The A measures are based on data for regular contracts and temporary contracts. The B measures are based on information for those contracts and on information about collective dismissals. All the EPL measures show that the Anglo-Saxon countries led by the US have the least restrictions on the rights of employers to alter employment at will. Using a factor analysis mode of scoring, Nicoletti, Scarpetta, and Boylaud rated the UK second to the US in both 1990 and 1998 (columns 5 and 6).

The measures of change in EPL regulations in columns 4 and 7 show, however, that in most countries with high EPIs the level of protection fell in the 1990s. The most prominent and widely studied case is that of Spain, which had very tight restrictions, and then introduced temporary contracts to encourage firms to hire workers. These contracts have come to cover over one-third of the work force, though they do not seem to have done much to improve the operation of the Spanish job market. With the countries that have high employment protection reducing their protection and the countries that have low protection maintaining their low levels of protection, the variation among OECD countries in EPL legislation has diminished. Barring a compensating increase in the impact of EPL regulations on outcomes, the fall in variation implies that the effect of EPL legislation in explaining variation in outcomes is less in the late 1990s than it was a decade earlier.

How well correlated are the measures of labor market institutions in Tables 3 -5 with the broader freedom indices in Table 1?[7] In general there is a reasonably high correlation between the scores for centralized wage setting, union density/collective coverage, and employment protection, and the indices of economic freedom. The 1991 Layard, Nickell, and Jackman rating of the wage-setting system of countries, for instance, which gave low values to countries with decentralized wage setting is correlated -0.60 with the Fraser index, which gave high values for countries with less restricted markets. The rate of union density is correlated -0.32 with the Fraser index, indicating that the more highly unionized countries scored lower in market freedoms. This presumably reflects their social democratic orientation, which favors collective activities over the individual market freedoms captured by the index. The Fraser index is correlated at -0.86 with the late 1990s OECD B-index and at -0.81 with the Nicoletti et al, (1999) measures of the strength of EPL legislation. The implication is that the Fraser index does a reasonably good job in capturing the variation across countries in labour market institutions, although the labour market is a relatively modest factor in the index.

[7] There are other ways to measure labor market institutions. Using data on laws gathered by La Porta et al, (1997). I have tabulated summary measures that show how the advanced OECD countries differ in constitutional protection of labor, ILO conventions, and diverse other regulations. Using these measures as indicators of institutions does not change the findings of this study.

Product market and business formation regulations

All countries regulate how firms operate in product markets. They protect consumers through labeling and related laws; they seek to minimize monopolistic behaviour through anti-trust policies; and try to influence market outcomes in various ways for any number of political economy reasons, including the opportunity that regulations give politicians and bureaucrats to extract bribes from businesses.

To assess the extent and intrusiveness of regulations on business the OECD sent a detailed questionnaire to member states in 1998 asking for information on 1300 different regulations concerning economy-wide and industry specific laws, regulations and administration of laws. The responses to this questionnaire form the basis of the OECD regulatory data base, which is by far the most comprehensive and detailed body of information on product market regulations across countries. The data base has two important limitations. First, it is limited to administrative regulations, which means that it excludes judicial system regulations of product markets. Since the US makes greater use of courts and court suits, which can be expensive and time-consuming, the index arguably gives the US a more market-friendly environment than in fact exists. Only in the US do court suits have the potential for bankrupting tobacco firms and only in the US are product liability law suits a major concern for business. Second, the OECD regulatory data base does not treat adequately the extent to which state regulators actually enforce regulations, which depends on state funding of government agencies, the salaries paid to civil servants, and modes of compliance.

The principal report using the data base (Nicoletti, Scarpetta, and Boylaud, 1999) employs a factor analysis model to analyze the extent of regulatory procedures in several domains. It differentiates between inward oriented regulations, covering state control of industry, barriers to entrepreneurship, and regulations of domestic markets; and outward-oriented regulations, covering barriers to trade and investment. To summarize the extent of regulation across all domains, Nicoletti et al aggregate the statistics into a single market measure. Different aggregations of the responses to the 1300 or so questions in the database would give different measures to each country than Nicoletti et al produce, but would presumably give a similar ordering of countries by the scope and depth of regulatory practices. I use the Nicoletti et al measures in this paper.

Table 6 records the product market regulatory scores for the OECD countries. The scaling is such that higher scores mean a thicker and more intrusive set of regulations and thus one nominally less friendly to market mechanisms. In all of the inward oriented regulatory domains and overall, the UK is the least regulated economy. The US, Ireland, and Australia also show limited regulatory activity. At the other end of the spectrum, Italy, Norway and Greece have the most highly regulated product markets. As with other indices, the regulatory scales show some odd results for particular countries that highlight the problems of developing simple scales for country institutions. In the case at hand, the OECD gives the UK has a lower score in barriers to entrepreneurship than the US, the hot bed for entrepreneurial activity. The difference between the US and UK comes from two sub indices: one that measures the "regulatory and administrative opacity" (attributed to the high number of administrative procedures and services involved in business startups) and barriers to competition. In the former case, it disagrees with the La Porta et al count of the number of procedures and time needed to start a business in the two countries, which shows the US to have lower barriers to entrepreneurship. Perhaps more important, the OECD index does not take account of relatively lenient US bankruptcy laws, which enable entrepreneurs to fail and start up again with impunity.

The overall product market regulation score correlates reasonably well with the various measures of economic freedom: 0.69 with the Fraser Index, 0.60 with the Heritage Foundation/WSJ index, and 0.53 with the Freedom House index. But there are some differences between the product market regulatory score and the indices of economic freedom. For example, New Zealand has a regulatory index that differs only modestly from that for Germany, for instance, whereas the two countries differ greatly in the indices of economic freedom. In addition, the scaling of the product regulation regulations differs so much from the scaling of the indices of the indices of freedom as to invalidate any comparison in the variation of institutions that each reports. The measures of economic freedom vary from 0 to 100, whereas the regulatory scores vary over a greater range, producing much larger coefficients of variation in scores. Because the OECD first asked countries about their regulatory regimes in the late 1990s, we cannot ascertain whether the cross-country variation declined over time, as did the variation in freedom indices.

Finally, note that the OECD regulatory scores are much less well correlated with the measures of the centralization of wage-setting than with the freedom indices. The

correlation of the OECD regulatory score with the Layard et al, (1991) rating of wage-setting, for example, is just 0.36. The fact that the wage and product market indices are more highly correlated with the indices of economic freedom than with each other suggests that the freedom indices are good summary measures while the other indices are in fact reflecting the particular markets on which they focus.

To assess the ease of starting a new business, researchers in corporate finance have gathered data on regulations covering start-ups (Djankov, La Porta, Lopez-de-Silanes, Shleifer, 2000). Columns 1-3 of Table 7 summarize their analysis in terms of three broad measures of the eases of business formation: the estimated number of procedures needed to start a business, the estimated time to meet those requirements; and the estimated direct and indirect cost of meeting the requirements relative to gdp per capita. Djankav et al note the wide variation in these measures:

> "To meet government requirements for starting to operate a business in Austria, an entrepreneur must complete 12 procedures taking at least 154 days and pay US$11,612 in government fees" (Djankov et al, p 1).

This compares with 4 procedures that take 7 days at a cost of $2806 in the US and even less in Canada (Djankov, et al, Table III). The table shows that Greece, Portugal, Austria, Netherlands are the most difficult countries in which to form a new business, while the US, UK, Denmark, Canada, Finland, and New Zealand are the easiest.

To assess the protection given to investors to invest or loan money to firms, La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1999) have developed indices of the rights of investors and creditors in the various countries. Columns 4-7 of Table 7 present their summary of the assessment of law and order in the country (on a scale from 0 to 10), based on the International Country Risk Guide, and their indices of shareholder rights (scale of 0 to 4) and creditor rights (scale of 0 to 5). The majority of the advanced countries obtain the highest value in the rule of law measure, with however some of the lower income countries scoring substantially lower than the maximum 10 score. There is greater variation in the protections given to shareholders and creditors, at least by these measures. The US, for instance, provides considerable anti-director protection while Italy does not; whereas the UK provides considerable creditor rights while France does not. La Porta et al show that the

different legal codes produce different corporate valuations, but do not attempt to link these institutional differences to differences in aggregate national economic outcomes.

3. Institutions and Outcomes

Are the measures of economic institutions related to outcomes in the OECD countries?

Most statistical analyses of this question have linked measures of institutions in specific markets, usually the labour market, to ensuing economic performance. The absence of reliable data on changes in institutions over time has made longitudinal analysis that assesses how differences in institutions affect differences in outcomes across countries rare. Studies that use a before/after methodology focus on particular countries where institutions changed markedly (ie New Zealand, or the UK before and after Mrs. Thatcher), which makes it difficult to define an appropriate counterfactual – what would have happened in that country absent the change.

The existence of the Fraser economic freedom indices from 1970 to the present allow for a broader longitudinal analysis that can include individual country fixed effects, wiping out unobserved (fixed) country characteristics to focus on changes over time. As I have demonstrated, moreover, the indices are sufficiently correlated with most indicators for specific markets to provide a reasonable measure of the market-friendliness of country economic institutions. In any case, to assess the link between institutions and outcomes, I have estimated two types of models:

(1) Outcome = a + b FRASER + COUNTRY DUMMIES + YEAR DUMMIES
(2) DOutcome = a + b FRASER + COUNTRY DUMMIES + YEAR DUMMIES

where Outcome is the particular outcome, FRASER is the Fraser index, DOutcome is the change in the outcome over the succeeding five years, and where the country and year dummies are included to remove country fixed effects and year effects.

The first model relates the level of outcome to the level of the Fraser index, but by including the fixed country effects, it does so in a "difference" format: comparing deviations of outcomes from their mean value with deviations of the Fraser index from its

mean value. The second model relates the change in outcome between year t and year t+5 to the Fraser index in year t. I chose the five year period because the Foundation provided new indices every five years (until 1997). In this calculation, I also performed calculations in which lagged values of the outcome variable were also entered in the equations.

Table 8 records the coefficients on the Fraser index in regressions for 23 countries in five year periods from 1970 to 1999. The outcome measures in the calculations are: lnGDP per capita; ln GDP, ln GDP/Employees; ln Employment/Population; ln GDP deflator (in the change form) and the rate of unemployment (in the level form). Each data point is a country year observation. Because the index is produced on a five year basis, there are 6 observations per country, giving a data set with 138 records. In panel A the dependent variables are changes in ln outcomes. In panel B the dependent variables are levels of outcomes.

Column (1) in both panels give the basic cross section regression of the dependent variable on the Fraser index and year dummies. Column (2) adds country dummies, so that the analysis treats within country differences. Column (3) adds a squared Fraser term to the regression to see if there is any support for the U-shaped hypothesis that countries with the most/least market freedoms operate similarly, per Calmfors and Driffil and per the Mancur Olson argument about all-encompassing unions. The column (1) calculations show some links between the Fraser index and outcomes, largely in the level calculations in panel b. Countries with high degrees of market freedom have higher GDP per capita (call it the North American effect), high employment-population rates, high GDP per employee rates, and lower unemployment. But they lose some of their edge in the panel regressions for changes in variables (particularly in gdp per employee). Addition of the country dummies, however, eliminates virtually all of the relationships, save for an effect on unemployment rates in the level regressions. With country dummies, moreover, there is only a glimmer of support for the U-shaped hypothesis. Overall, with inclusion of country dummies, there is no discernible link between the Fraser indices and outcomes

There are three possible interpretations of these results. First, it may be that the stress that economists put on market freedoms, while supported by cross sectional analyses, vastly exaggerates the impact that changes in market freedoms have on economic success. To see if this is the case, I have replicated the growth and level regressions of outputs on the Fraser indices for GDP per capita (using World Bank rather than OECD data) for a wider

range of countries that includes less developed countries. Addition of LDCs to the analysis produces much greater variation in institutions, with the Fraser indices of market freedoms ranging from 1.6 in Myanmar in 1995 to the levels shown in Table 1 for the advanced OECD countries. The calculations in Table 9 show a striking difference between the results for OECD countries and LDCs (all countries save for OECD countries and NICs). For OECD countries, the results mimic Table 8: insignificant effects, however the model is specified. For LDCs, by contrast, we obtain a positive effect of the Fraser index measures of economic freedom on GDP per capita in the fixed effect country analysis. These computations indicate that changes in market freedoms over a wider range of institutional settings produce changes in economic outcomes, and thus reject the first proposed explanation for the negligible OECD results.

Second, it may be that the Fraser indices are insufficiently refined measures of the institutional differences among OECD countries to uncover any institution-outcome relationship. The Fraser and other measures of market freedoms are broad indices that do not capture the fine points of labor market institutions, product market regulations, or regulations of business formation or investor protections shown in the tables on particular institutions. The absence of time series data on these detailed measures rules out any definitive test of this hypothesis, but the cross section variation in them is no more correlated with economic performance than the Fraser indices. This makes it unlikely that time series variation in these measures would explain the changing relative fortunes of OECD countries better than the aggregate Fraser indices.

The third explanation, which I regard as the most natural one, is that the observed patterns do not support the superiority of particular brands of advanced capitalism. Within the range of variation in institutions that differentiate the US, UK, Germany, Sweden, Japan, and so on, there is either a relatively flat or a multiple peaked link between institutions and outcomes. Outside that range institutional variation may have large effects on outcomes, but once a country has a strong tradition of basic market freedoms – protection of property, rule of law, private ownership rights, viability of contracts, etc – it has considerable leeway in the precise way it structures its institutions. Advanced capitalism is a sturdy economic system that allows for diversity in institutional arrangements.

Table 1: Measures of Economic Freedom/Market Friendliness and Competitiveness, 1996

	Fraser 1995 (high) (1)	Heritage/WSJ 1996 (low) (2)	Freedom House 1996 (High) (3)	Competitiveneness Rank (High) 1996 (4)	1999 (5)
Australia	86	2.05	14	16	8
Austria	78	2.10	15	15	14
Belgium	82	2.10	15	13	16
Canada	84	2.10	15	10	2
Denmark	81	2.00	16	3	12
Finland	81	2.35	14	12	7
France	81	2.30	15	17	15
Germany	82	2.20	15	8	17
Greece	68	2.90	12	22	21
Ireland	86	2.10	15	18	6
Italy	75	2.60	13	19	20
Japan	82	2.05	13	2	10
Lux	84	2.00	–	6	–
Neth	84	1.90	16	5	9
N Zealand	91	1.80	16	9	5
Norway	81	2.45	15	4	11
Portugal	78	2.65	14	21	19
Spain	79	2.70	14	20	18
Sweden	79	2.65	16	11	13
Switz	85	1.95	14	7	3
UK	88	1.90	16	14	4
US	89	1.85	16	1	1
Ave	82	2.3	14.7	--	
NICs	86	3.2	10.3	--	
Latin Am	72	2.9	10.5	--	
Africa	51	3.5	9.3	--	
Asia	58	3.4	9.8	--	
Rest of Eur	56	3.3	9.9	--	
Others	63	3.3	12.3	--	

Source: Tabulated from Richard F. Messick, World Survey of Economic Freedom, 1995-1996
Heritage Foundation, Index of economic freedom, www.heritage.org/index/
Fraser Foundation, Economic Freedom of the world, www.freetheworld.com/release.html
World Economic Forum www.weforum.org
IMD/World Economic Forum, The World Competitiveness Report 1990, 1999

Table 2: Fraser Institute Economic Freedom Ratings: Advanced OECD Economies in 1970-1997

	1970	1975	1980	1985	1990	1995	1997	Change 1980-1997	Rank 1980-1997	
Australia	81	69	74	78	81	86	86	12	11	7
Austria	72	62	68	69	76	78	80	12	16	25
Belgium	93	78	80	81	81	82	83	3	5	14
Canada	81	77	80	82	85	84	86	6	5	7
Denmark	76	67	68	69	77	81	84	16	16	12
Finland	81	67	71	74	77	81	82	11	13	18
France	73	63	63	64	78	81	80	17	25	25
Germany	82	77	78	79	83	82	81	3	8	22
Greece	63	58	57	52	61	68	74	27	38	42
Ireland	68	62	66	67	73	86	87	21	21	6
Italy	68	55	55	60	74	75	79	24	44	31
Japan	73	70	74	77	83	82	83	9	11	14
Luxembourg	91	88	90	94	83	84	85	-5	1	9
Netherlands	86	74	78	78	81	84	85	7	8	9
New Zealand	70	60	64	62	81	91	91	27	24	3
Norway	70	61	62	68	77	81	81	19	28	22
Portugal	56	34	56	57	64	78	80	24	41	25
Spain	65	59	62	63	70	79	82	20	28	18
Sweden	62	62	63	70	75	79	80	17	25	25
Switzerland	89	80	84	87	86	85	85	1	4	9
United Kingdom	66	59	68	82	86	88	89	21	16	5
US	80	81	85	86	88	89	90	5	3	4
Mean	74	66	70	72	78	82	83			
Coefficient of Var	.14	.19	.15	.15	.09	.06	.05			

Source: Tabulated from Gwartney and Lawson (2000).

Table 3: Ranking of Advanced Countries in Centralization/Decentralization in Wage Setting (High=Centralized)

	Early 1980s			Mid 1980s			Late 1980s	Early 1990s			Mid 1990s
	1979	1981	1984	1984	1986	1986	1988	1990	1991	1991	1995
Australia	10	-	9	3	3	10	8	-	4	7	2,1988+,1
Austria	16	15	16	15	17	16	17	10	18	17	3
Belgium	8	9	15	10	9	6	10	-	10	11	2
Canada	1	5	5	3	2	5	1	-	2	3	1
Denmark	13	12	13	10	11	12	14	-	14	17	3
Finland	12	12	14	10	10	8	13	-	11	17	3-.>2
France	5	3	2	18	5	3	7	3	7	11	2
Germany	9	8	11	10	16	15	12	6	12	14	3
Italy	3	1	6	6	4	1	5	4	6	7	1,1992+,3
Japan	6	-	3	18	8	14	4	11	9	11	1
Netherlands	7	10	12	15	15	9	11	5	15	11	2,1988+,3
New Zealand	11	-	-	3	7	4	9	-	3	3	2,1991+,1
Norway	15	14	17	17	13	11	16	8	17	17	3
Portugal	-	-	-	-	-	-	-	-	-	-	2
Spain	-	-	1	-	-	-	-	-	-	7	3,1985+,2
Sweden	14	12	18	15	13	13	15	7	16	17	3->2
Switzerland	-	7	7	10	12	-	3	9	13	11	-
UK	4	2	10	6	6	2	6	2	5	3	2->1
US	2	5	4	3	1	7	2	1	1	3	1

Source: OECD Employment Outlook, July 1997, Table 3.4. The columns are from the following studies: 1979 Blyth; 1981 Schmitter; 1984 Cameron; 1984 Lehmbruch; 1986 Bruno and Sachs; 1986 Tarantelli; 1988 Calmfors/Driffil; 1990 Soskice; 1991 Lipjphart/Crepaz; 1991 Layard, Nickell,Jackman; 1995 Elmeskov, Martin, Scarpetta.

Table 4:
The Increasing Diversity of Unionism and Collective Bargaining, 1980-1997

	DENSITY		COVERAGE	
	1980	1997	1980	1994/97
Declining Density & Coverage				
UK	50	30	70	44
US	22	16	26	18
Japan	31	21	28	18
New Zealand	56	30	67	31
Australia	48	35	88	80
Declining Density & Stable/Rising Coverage				
Austria	52	39	98	98
France	22	10	85	95
Germany	36	29	91	92
Italy	50	37	85	82
Netherlands	35	24	76	81
Portugal	52	30	70	71
Switzerland	31	23	53	50
Stable Density/Coverage				
Belgium	53	53	90	90
Canada	36	38	37	36
Denmark	79	76	69	69
Norway	55	55	75	74
Rising Density & Stable/Rising Coverage				
Finland	69	88	95	95
Spain	8	17	76	78
Sweden	78	86	86	89
Average	45	39	72	68
Coefficient of Variation	.41	.59	.30	.39
#5 Relative to #15	1.6	2.3	1.3	1.8

Source: OECD Employment Outlook, July 1997, Table 3.3, with updates from Blanchflower, 2000.

Table 5: Employment Protection Indices

	OECD				Nicoletti et al		
	Late 1980s	Late 1990s		Change	1990	1998	Change
	A	A	B	(A)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
European Union							
Austria	2.2	2.2	2.3	0	2.4	2.4	0.0
Belgium	3.1	2.1	2.5	-1.0	3.0	2.1	-0.9
Denmark	2.1	1.2	1.5	-0.9	2.4	1.5	-0.9
Finland	2.3	2.0	2.1	-0.3	2.2	2.1	-0.1
France	2.7	3.0	2.8	0.3	2.7	3.1	0.4
Germany	3.2	2.5	2.6	-0.7	2.9	2.8	-0.1
Greece	3.6	3.6	3.5	0.0	3.6	3.5	-0.1
Ireland	0.9	0.9	1.1	0.0	1.0	1.0	0.0
Italy	4.1	3.3	3.4	-0.8	4.2	3.3	-0.9
Netherlands	2.7	2.1	2.1	-0.6	3.1	2.4	-0.7
Norway	3.0	2.6	2.6	-0.4	3.1	2.9	-0.2
Portugal	4.1	3.7	3.7	-0.4	4.2	3.7	-0.5
Spain	3.7	3.1	3.1	-0.6	3.7	3.2	-0.5
Sweden	3.5	2.2	2.6	-1.3	3.4	2.4	-0.1
Switzerland	1.0	1.0	1.5	0.0	1.3	1.3	0.0
United Kingdom	0.5	0.5	0.9	0.0	0.5	0.5	0.0
Non-EU countries							
Australia	0.9	0.9	1.2	0.0	1.1	1.1	0.0
Canada	0.6	0.6	1.1	0.0	0.6	0.6	0.0
Japan	%	2.4	2.3	%	2.6	2.6	0.0
New Zealand	%	2.6	0.9	%	1.0	1.0	0.0
US	0.2	0.2	0.7	0.0	0.2	0.2	0.0

Source: Columns, 1-3, OECD, Employment Outlook, 1999, Table 2.5
Column 4 gives the difference between columns 1 and 2
Columns 5 and 6, Nicolletti et al, Table A3.11, but my EPL change is the change in EPL 1998 and EPL 1990, not the figures they report, as they seem to have transposed the EPL and EPL regular contracts columns for changes

Table 6: Country Regulatory Policies of Advanced Economies, Indices from OECD 1998 Regulatory Data Base

	Inward Oriented Regulations				Outward Oriented		Overall Product
	State Control	Barriers to Entrepren	Regulation Admin	Eco	Total	Barriers To Trd/Inv	Market Regs
European Union							
Austria	211	160	160	210	118	54	140
Belgium	278	255	300	240	270	63	190
Denmark	246	132	110	230	190	54	140
Finland	268	193	220	210	230	63	170
France	263	273	310	230	270	103	210
Germany	176	210	270	140	190	54	140
Greece	387	166	200	310	270	132	220
Ireland	94	120	150	80	80	43	80
Italy	392	274	300	350	330	49	230
Netherlands	228	141	150	210	180	54	140
Norway	319	133	140	270	220	215	220
Portugal	283	146	150	250	210	107	170
Spain	259	177	230	210	220	68	160
Sweden	151	180	200	130	170	84	140
Switzerland	208	224	260	190	220	132	180
United Kingdom	55	48	50	60	50	43	50
Non-EU							
Australia	126	113	110	130	120	43	90
Canada	129	80	90	110	100	215	150
Japan	129	233	270	140	180	102	150
New Zealand	166	121	150	140	140	95	130
US	85	126	70	100	110	87	100

Source: Nicoletti, Scarpetta, and Boylaud
State control, Table A3-1
barriers to entrepreneurship, Table A3-2
administrative regulation, Table A3-4
economic regulation, Table A3-5
total inward oriented policies, Table A3-6
barriers to trade/investment, Table A3-3
total, product market regulation, Table A3-7

Table 7: Regulation of Business Formation and Protection of Investors in Advanced OECD Countries

	Business Formation			**Protection of Investors** (higher=better)		
	# Procedures required	Days to get Approval	Cost/GDP Per Capita	Rule of Law	Anti-Director Rights	Creditor Rights
Australia	3	3	.0209	10	4	1
Austria	12	154	.4545	10	2	3
Belgium	8	42	.1001	10	0	2
Canada	2	2	.0140	10	4	1
Denmark	5	21	.0136	10	3	3
Finland	4	32	.0199	10	2	1
France	16	66	.1970	8.98	2	0
Germany	7	90	.0851	9.23	1	3
Greece	13	53	.4799	6.18	1	1
Ireland	4	25	.1145	7.80	3	1
Italy	11	121	.2474	8.33	0	2
Japan	11	50	.1144	8.98	3	2
Neth	8	77	.3031	10	2	2
N Zealand	3	17	.0042	10	4	3
Norway	6	24	.0249	10	3	2
Portugal	12	99	.3129	8.68	2	1
Spain	11	83	.1269	7.80	2	2
Sweden	4	17	.0254	10	2	2
Switz	12	88	.1336	10	1	1
UK	7	11	.0056	8.57	4	4
US	4	7	.0096	10	5	1

Source: Djankov, Simeon; La Porta, Rafael; Lopez-de-Silanes, Florencio; Shleifer, Andrei, "The Regulation of Entry", NBER Working Paper 7892 September 2000; La Porta, Lopez-Silanes, Shleifer, and Vishny, "Investor Protection and Corporate Valuation" NBER Working Paper 7403, October 1999; La Porta, Lopez-Silanes, Shleifer, and Vishny, "Legal Determinants of External Finance", NBER Working Paper 5879, January 1997.

a) Table III, number of procedures = sum of safety & health, environment, taxes, labor, screening,; time = estimated days before firm can start operation; cost = time and direct cost of meeting requirements as fraction of GDP per capita in 1997.

b) Rule of Law, based on International Country Risk Guide.
Anti-Director Rights, index that measures shareholder rights, range from 0 to 5.
Creditor Rights, range from 0 to 4.

Table 8: Coefficients and Standard Errors on the Fraser Index of Economic Freedom in Regressions of Ln Changes and level of Macro Variables, 1970-99:

OECD ADVANCED COUNTRIES

A) Ln Changes:		Fraser		Fraser^2		Year Dummy	Country Dummy	R^2
∆ ln GDP/Capita	(1)	-.006	(.006)	--	--	Y	--	.183
	(2)	.001	(.011)	--	--	Y	Y	.449
	(3)	-.038	(.056)	.003	(.004)	Y	Y	.451
∆ ln GDP								
	(1)	-.005	(.006)	--	--	Y	--	.188
	(2)	.001	(.011)	--	--	Y	Y	.493
	(3)	-.087	(.053)	.006	(.004)	Y	Y	.507
∆ ln GDP/employee								
	(1)	-.012	(.005)	--	--	Y	--	.17
	(2)	-.004	(.009)	--	--	Y	Y	.425
	(3)	-.077	(.045)	.005	(.003)	Y	Y	.439
∆ ln Employment/Population								
	(1)	.005	(.005)	--	–	Y	--	.113
	(2)	.020	(.010)	--	--	Y	Y	.213
	(3)	-.024	(.051)	.003	(.004)	Y	Y	.219
∆ ln GDP Deflator								
	(1)	-.006	(.005)	--	--	Y	--	.224
	(2)	.011	(.009)	--	--	Y	Y	.564
	(3)	-.059	(.044)	.005	(.003)	Y	Y	.575
B) Level Regressions								
ln GDP/Capita	(1)	.144	(.017)	--	--	Y	--	.593
	(2)	-.001	(.016)	--	--	Y	Y	.929
	(3)	.046	(.078)	-.003	(.006)	Y	Y	.929
ln Employment/Population								
	(1)	1.349	(.759)	--	--	Y	--	.044
	(2)	.351	(.606)	--	--	Y	Y	.876
	(3)	-1.718	(3.027)	.152	(.218)	Y	Y	.877
ln GDP/employee								
	(1)	.332	(.149)	--	--	Y	--	.053
	(2)	-.001	(.015)	--	--	Y	Y	.998
	(3)	-.03	(.077)	.002	(.006)	Y	Y	.998
Unemployment								
	(1)	-.682	(.350)	--	--	Y	--	.199
	(2)	-.720	(.491)	--	--	Y	Y	.701
	(3)	.589	(2.447)	-.095	(.174)	Y	Y	.702

Table 9: Coefficients and Standard Errors on the Fraser Index of Economic Freedom in Regressions of Ln Changes in GDP Per Capita and in the level of GDP Per Capita, 1970-99

Dependent Variable:	Fraser Index	Dummy Variables YEAR	COUNTRY	Lagged Ln GDP/cap	R^2	# obs
Ln GDP per capita						
ALL COUNTRIES	.083 (.012)	Y	Y	-	.976	613
ADVANCED OECD COUNTRIES	.021 (0.14)	Y	Y	-	.986	128
LDC COUNTRIES	.092 (.013)	Y	Y	-	.966	.461
Change in ln GDP per capita ensuing 5 years						
ALL COUNTRIES	.023 (.008)	Y	Y	-	.772	527
ADVANCED OECD COUNTRIES	-.011 (.011)	Y	Y	-	.953	106
LDC COUNTRIES	.022 (.010)	Y	Y	-	.730	401
ALL COUNTRIES	.032 (.007)	Y	Y	-.333 (.022)	.855	527
ADVANCED OECD COUNTRIES	-.001 (.010)	Y	Y	-.211 (.072)	.953	106
LDC COUNTRIES	.035 (.008)	Y	Y	-.366 (.023)	.966	401

Source: Tabulated using Fraser index and measures of real GDP per capita, from World Bank. Comparable results obtained using GDP figures from Penn World Tables.

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