

LABOR MARKET INSTITUTIONS AND EMPLOYMENT POLICIES: THE INTERNATIONAL EXPERIENCE

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Abstract

This paper presents evidence that legal protection of property rights is indeed an important contributor to economic success but that institutional and legal protection of the rights of labor is also associated with economic success, particularly in developing countries. Cross-country analyses show that measures of labor protections have the same relation to economic efficiency, measured by GDP per capita, as measures of protection of property, and that both protection of property rights and protection of labor rights reduce economic inequality. The results suggest that as legal protection of property gives investors the right message about economic activity: invest in productive undertakings and you will gain the fruits of your investments; legal protection of labor gives workers the right message about economic activity: work and you will gain the fruits of your labor.

Resumen

Este artículo muestra evidencia para asegurar que la protección legal a los derechos de propiedad contribuye de manera importante en el éxito económico; asimismo, la protección institucional y legal a los derechos laborales también está ligada a dicho éxito. A través de un análisis de corte transversal para varios países, se muestra que las medidas de protección laboral tienen la misma influencia sobre la eficiencia económica, medida como el PIB per cápita, que la que tienen las medidas de protección a la propiedad privada; además, ambas medidas de protección de derechos tienden a reducir la desigualdad económica. Los resultados sugieren que así como la protección legal a los derechos de propiedad da a los inversionistas este mensaje: inviertan en actividades productivas y recibirán los frutos de su inversión; también la protección legal a los trabajadores les da este mensaje económico: trabajen y ganarán los frutos de su labor.

JEL Classification: D23, J81, J83, O1.

Keywords: *Economic Freedom, Labor Regulation, Property Protection, Employment Protection.*

There is a widespread belief among economists that legal protection of private property rights are a critical factor in economic growth and prosperity. De Soto has argued that the poor as well as the rich must have property rights for a developing economy to advance rapidly. Almost all analysts agree that protection of private property from confiscation by the state or others is necessary if people are to accumulate property and invest in wealth-creating activities. Many analysts and governments have gone further and favor privatization of traditional public sector activities as way of better delivering public goods. The failure of communist economies has shown that state ownership of property cannot substitute for the incentives of individual ownership.

At the same time, there is also a widespread belief among economists that labor market institutions and regulations are impediments to economic growth and prosperity. Many see legal protections of workers and labor market outcomes as “distortions” from a perfect exchange economy. The OECD Jobs Study argued that the problems of European economies stemmed from labor regulations that reduced the flexibility of the labor market. The World Bank and IMF have historically been leery of regulations protecting labor in developing countries while demanding greater protection for capital, particularly to attract overseas investment. These organizations have argued that labor market “reforms” in the form of reduced institutional interventions in markets are all that economies need to succeed.

This paper presents evidence that legal protection of property rights is indeed an important contributor to economic success but that institutional and legal protection of the rights of labor is also associated with economic success, particularly in developing countries. Cross-country analyses show that measures of labor protections have the same relation to economic efficiency, measured by GDP per capita, as measures of protection of property, and that both protection of property rights and protection of labor rights reduce economic inequality. Just as legal protection of property gives investors the right message about economic activity: invest in productive undertakings and you will gain the fruits of your investments; legal protection of labor gives workers the right message about economic activity: work and you will gain the fruits of your labor. Consistent with this incentive-based interpretation, employment policies that seek to induce workers to change their labor supply behavior seem to be generally more effective than employment policies that seek to induce firms to change their labor demand behavior.

I begin by examining measures of cross-country protection of property and of labor regulations using data from the Fraser Institute and measures of regulations and competitiveness from the World Economic Forum/Harvard Center for International Development (WEF/HCID). I compare how these measures differ between advanced countries and LDCs and show how Chile, Argentina, and Brazil fit into the ratings. Then I use a simple regression model to demonstrate that greater labor regulations have the same statistical relation with economic success and inequality as does greater protection of property. Since the Fraser and WEF/HCID ratings code greater labor regulations as reducing economic freedom/competitiveness while coding greater property protection as increasing economic freedom/competitiveness, the implication is that they have reverse-coded the labor regulations. I conclude with some interpretations of these findings.

MEASURES OF ECONOMIC INSTITUTIONS AND POLICIES, ACROSS COUNTRIES

There is a burgeoning industry in developing quantitative measures of the economic institutions and policies of countries around the world. Analysts and policy-makers have constructed ratings and rankings for the market-friendliness of economic policies, corruption, trust, governance, openness to trade, etc for almost every economy in the world. Researchers have examined the statistical relation between these indicators and outcomes. In this paper I use indices of economic freedom from the Fraser Institute and indices of competitiveness from the World Economic Forum/Harvard Center for International Development to compare the legal protection of property rights and labor regulations around the world.

The Fraser Institute has measured institutions and policies relating to economies in five year intervals from 1970 to 2000. The Institute focuses on a concept of economic freedom, defined as “personal choice, voluntary exchange, freedom to compete, and protection of person and property” (Fraser Institute, *Economic Freedom of the World: 2002 Annual Report*, p. 5). For the most part, economic freedom is co-terminus with what I would call the “market friendliness” of economic arrangements – the leeway given to market forces to determine outcomes. Until 2001 the indices dealt only cursorily with labor institutions. In its 2001 report, however, the Institute presented a more comprehensive freedom index for 58 countries that included six indicators of labor institutions and additional indicators for legal structure and property rights. In 2002, it extended these measures to 74 countries.

For many years, the World Economic Forum and various partner and rival institutions have produced competitiveness reports. These reports mix quantitative data and surveys of executives from large multinational firms to measure “the set of institutions and economic policies supportive of high rates of economic growth in the medium term” (GCR, 2000, p. 14). I use the data on labor regulations and overall competitiveness from the 2000 Global Competitiveness Report (GCR) as a second opinion on how countries differ in the market friendliness of their institutions and policies, and in their protection of labor. Since the Fraser Institute uses some data from competitiveness reports in its ratings, the two measures are not completely independent, but the measures from the GCR that I have selected differ in enough ways from those that enter the Fraser measures to provide additional information.

Some readers may worry that the conservative orientation of the Fraser Institute may affect its choice of indicators, or that the survey of business leaders in the GCR may give a misleading picture of economic institutions, especially relating to labor. The indices are, however, based on objective data and on survey results that any critic can remove from the indices for any perceived problems. Conservative analysts or executives may give a different (“biased”) picture of economic regulations than leftist analysts or union leaders (who would exhibit their own biases), but as long as the bias does not differ systematically among countries in ways that correlate with outcome measures, this will not distort my analyses.

My reading of the Fraser and World Economic Forum indices is that in fact they are good measures of what they purport to measure. The Fraser indices are reasonably highly correlated with other indicators of the market friendliness of

economic policies – for instance the measures of product and labor market flexibility produced by the OECD or the measures of economic freedom by Freedom House or the Heritage Foundation. The 2000 GCR compared executive reports on aspects of economic performance with objective data where both existed and found a positive, though imperfect correlation across countries. (Cornelius, Peter, Andrew Warner, “The Executive Opinion Survey” GCR 2000, pp. 92-98). In any case, for the purpose of this study, the conservative perspective provides a valuable lens through which to examine the link between protection of property and protection of labor rights to economic outcomes.

FRASER INSTITUTE INDICES OF ECONOMIC FREEDOM

Table 1 records the level and dispersion of the aggregate economic freedom index and of the property rights and labor regulations components of the economic freedom index from the Fraser Institute’s 2000 measure. The Institute scales its indices from 1 to 10, with higher values indicative of greater market freedoms. For ease of presentation, I report the measures on a scale from 10 to 100 by simply eliminating the decimal point. The column Advanced refers to countries with high levels of GDP per capita, including South Korea, Hong Kong, Singapore, and Taiwan. The column Developing refers to all other countries.

Line 1 of the table shows that the aggregate economic freedom index is markedly higher for advanced countries than for LDCs: the 14 point percentage difference is significant with a t-statistic of 7.92. Line 2 reveals an even bigger difference between the advanced and developing countries in the legal structure and property rights indicator. Here the advanced countries score 32 points higher than LDCs. The labor institution indicator gives a very different picture: slightly greater market freedom in LDCs than in advanced countries. This indicator also varies greatly among the advanced countries, with a standard deviation relative to the mean of 26% compared to 13% for legal structure/property rights.

Table 2 displays the Fraser measures of overall economic freedom, legal protection/property rights and labor regulations for a sample of advanced countries and for three important Latin American economies, and gives the measures for highest and lowest scoring countries, as well. On all three indicators, the Fraser measures puts Hong Kong number one, which makes it effectively the least regulated economy in the world. The US and UK also score relatively high on all three indicators. The Scandinavian countries are high on the broad measure of economic freedom and on legal structure/property rights but are lower on the measure of labor market regulations due to their greater institutional and legal structuring of the labor market. Germany rates relatively high in overall economic freedom and protection of property but has the **lowest** rating in the labor market of any country in the world. Among the Latin American economies, Chile rates highest in overall economic freedom and property protection, while Brazil rates lowest; Argentina rates highest in the labor market indicator and Chile rates the lowest. The ratings do not take account of the Argentinian economic crisis and abrogation of property rights due to its banking collapse in 2002 and show little foresight about those problems. At the bottom of the ratings are Congo, Guatemala, and as noted Germany.

TABLE 1
THE LEVEL AND STANDARD DEVIATION OF ECONOMIC FREEDOM INDICES,
COUNTRIES WITH DETAILED INDICES, 2000

Measure	Advanced Level (SD)	Less Developed Level (SD)
Aggregate Total	7.7 (0.6)	6.3 (0.8)
Labor Market Regulations	5.0 (1.3)	5.2 (1.2)
Legal Structure/Property Rights	8.4 (1.1)	5.2 (1.3)
# of countries	24	50

Source: Tabulated from Fraser Institute, *Economic Freedom of the World: 2002 Annual Report* by James Gwartney and Robert Lawson with Walter Park, Smita Wagh, Chris Edwards, and Veronique de Rugy. Data downloaded from <http://www.freetheworld.com/download.html>. Advanced countries include the high income OECD economies and South Korea, Hong Kong, Singapore, Taiwan. Less Developed countries are all other.

GLOBAL COMPETITIVENESS REPORT MEASURES OF LABOR REGULATIONS

The finding that labor institutions vary among advanced countries and that those countries regulate labor markets more than LDCs is not unique to the Fraser Institute indices. Table 3 displays a comparable pattern for eight labor market indicators from the 2000 Global Competitiveness report. Here, the indices vary from 1 to 7, with **high** values reflecting greater competitiveness. Again for simplicity I omit the decimal points, so the scaling is from 10 to 70. I have divided these indicators into two groups of four indicators. The first group covers government regulations (three of which the Fraser Institute used in their report, so there is considerable overlap on this measure). The second group covers union policies and collective bargaining.

The measures of government policies are:

The impact of the minimum wage: "The minimum wage set by law has little impact on wages because it is too low and/or not obeyed (1 = strongly disagree; 7 = strongly agree)

Hiring and firing practices (Employment Protection Legislation –EPL): "Hiring and firing practices are determined by employers" (1 = strongly disagree; 7 = strongly agree)

Employment rules (hours laws): Labor regulations facilitate the adjustment of working hours to meet unexpected changes in demand (1 = strongly disagree; 7 = strongly agree)

Unemployment Insurance: The unemployment insurance program strikes a good balance between social protection and preserving work incentive (1 = strongly disagree; 7 = strongly agree)

The measures of collective bargaining and union power are:

Union power: Union power and influence is low (1 = strongly disagree; 7 = strongly agree)

TABLE 2
THE ECONOMIC FREEDOM SCORES FOR PARTICULAR COUNTRIES
IN THE FRASER RATINGS, 2002

Country	Aggregate Economic Freedom Index	Legal Protection/ Property Rights Index	Labor Regulation/ Institution Index
Highest rated	Hong Kong (88)	Netherlands (96)	Hong Kong (77)
US	85	92	72
UK	84	93	69
Denmark	76	95	52
Sweden	74	90	34
Germany	75	91	29
Korea	70	60	55
Chile	75	65	49
Argentina	72	54	61
Brazil	58	54	46
Lowest rated	Congo (32)	Guatemala (30)	Germany

Source: Tabulated from Fraser Institute, *Economic Freedom of the World: 2002 Annual Report* by James Gwartney and Robert Lawson with Walter Park, Smita Wagh, Chris Edwards, and Veronique de Rugy. Data downloaded from <http://www.freetheworld.com/download.html>

TABLE 3
THE LEVEL AND STANDARD DEVIATION OF INDICATORS OF
LABOR INSTITUTIONS, GLOBAL COMPETITIVENESS REPORT, 2000

Measure	Advanced Level (SD)	LDC Level (SD)
Government Policies		
impact of minimum wage	3.7 (0.8)	5.0 (0.7)
hiring and firing practices	3.4 (1.1)	3.5 (0.7)
employment/hours worked rules	3.7 (0.9)	3.6 (0.8)
unemployment insurance	4.1 (0.9)	4.5 (0.4)
Company/Union		
union power	3.8 (1.0)	4.2 (0.8)
companies determine wages	4.2 (1.3)	5.0 (0.9)
management/worker antagonistic	5.2 (0.8)	4.6 (0.5)
pay related to productivity	4.5 (0.6)	3.9 (0.7)
Average	32.7 (7.4)	34.3 (5.4)
Number of countries	28	31

Source: Tabulated from World Economic Forum/Harvard Center for International Development, Global Competitiveness Report 2000, indicators 6.03, 6.06, 6.07, 6.08, 6.09, 6.10, 6.11, 6.12.

Wage Setting (company domination) Wages are determined by each individual company (1 = strongly disagree; 7 = strongly agree)

Management/worker relationships (cooperative relations): Management/worker relationships are generally cooperative (1 = strongly disagree; 7 = strongly agree)

Pay and Productivity: Pay is directly related to productivity (1 = strongly disagree; 7 = strongly agree)

The mean and standard deviation of scores in the Table 3 show that much of the difference in labor regulations between advanced countries and LDCs occurs in the area of unionization and collective bargaining. Advanced countries have lower scores (notably in minimum wages) or insignificantly different scores than LDCs on all of the government policy measures. But advanced countries score markedly lower in the union power questions (meaning that unions have greater power) and in whether companies determine wages than do LDCs (meaning that companies have less power). But executives also give the advanced countries higher scores in cooperative management/worker relations and in relating pay to productivity. To the extent that these differences are associated with greater institutional regularization of labor markets, they suggest that unionization and bargaining have a more mixed impact on those markets, even in the eyes of executives, than a simple univariate indicator of institutions would show.

Still, to summarize the GCR indicators, I formed the average rating given in the last row in the table. This statistic shows similar institutional variation in

these indicators as in the Fraser indices: considerable diversity in the measures of labor institutions among advanced countries and a modestly lower aggregate score in labor market institutions (implying more institutional influence on outcomes) for advanced countries than for LDCs. By contrast, the overall competitiveness indices in the GCR (not reported in the table) show that advanced countries almost uniformly have greater “growth competitiveness” and greater “current competitiveness” than LDCs. The advanced countries fill nearly all of top spots in the competitiveness rankings (GCR 2000, table 1 and 2, p. 11).

Table 4 displays the GCR measures of government regulations of the labor market for the same sample of advanced countries and Latin American countries as in Table 2, and gives the scores for the highest and lowest scoring countries, as well. The GCR gives Russia its highest score for minimum wages, presumably because the Russian government does little to enforce an effective minimum while giving France the lowest score due to the impact of the SMIC (*salaire minimum interprofessionnel de croissance*) on wages throughout the country. All three of the Latin American countries (and South Korea) are given higher ratings in the minimum wage measure than any of the advanced OECD countries. On employment protection legislation the highest ranking country is Singapore, while the lowest rated country is Germany. Within Latin America, Brazil and Argentina are scored as having greater employment protection than Chile, since they have lower scores on this indicator. On both the flexibility of hours and “balance” (=weakness) of unemployment insurance systems, Hong Kong scores highly and Sweden and Germany score low. Costa Rica is rated the country with the least flexible adjustment of hours.

Table 5 gives the GCR measures for unionism and collective bargaining. The rankings put Finland as the country with the strongest unionization, with Sweden as second and Germany and Denmark also having strong unions (and thus low scores). Hong Kong has the highest score for having weak unions. The UK and Chile also get high scores. Argentina has the lowest score among the Latin American countries in the table, and is tied with Ecuador in these ratings as having the strongest unions. The measure of the ability of firms to set wages is closely related to the measure of union power. Here, Ireland, where a national wages agreement affects wages, is given the lowest score while Hong Kong again scores highest. But Denmark, Sweden, and Germany score much higher on extent to which executives believe that pay is related to productivity than they do on the other measures. In the case of Denmark, this presumably reflects decentralized collective bargaining at the occupation level.

Finally, the last column in Table 5 gives the scores of countries by whether or not they have cooperative labor/management relations. Here the Scandinavian countries score higher than the US and UK. The implication is that having strong unions and economies where firms do not have power to set wages individually is no barrier to good labor/management relations. Historically, the Scandinavian countries have had a lower strike rate than the UK and have had shorter and less aggressive disputes between workers and management than the US. France and Korea score low on cooperative labor/management relations. Among Latin American countries, Bolivia, Venezuela, and Columbia (not reported in the table) are given the lowest scores in cooperative relations. Chile is given the highest score.

TABLE 4
COMPETITIVENESS RATINGS OF GOVERNMENT REGULATIONS OF
LABOR MARKETS COMPETITIVENESS (HIGHER SCORES ARE
FOR COUNTRIES WITH LESS REGULATIONS)

Country	Minimum Wage	Employment Protection	Hours Regulations	Unemployment Insurance
Highest rated	Russia (64)	Singapore (55)	Hong Kong (54)	Hong Kong (56)
US	34	46	48	52
UK	40	34	49	49
Denmark	25	44	44	34
Sweden	32	19	27	31
Germany	32	20	28	25
Korea	48	40	42	46
Chile	46	29	34	49
Argentina	55	51	30	46
Brazil	53	34	30	46
Lowest rated	France (25)	Sweden	Costa Rica (18)	Germany

Source: Tabulated from World Economic Forum/Harvard Center for International Development, Global Competitiveness Report 2000, indicators 6.03, 6.06, 6.07, 6.08.

TABLE 5
COMPETITIVENESS RANKINGS OF THE IMPACT OF UNIONS AND COLLECTIVE
BARGAINING (HIGHER VALUES IMPLY WEAKER UNIONS/BARGAINING
AND GREATER COMPETITIVENESS)

Country	Power of Unions	Firm Sets Wages	Pay Related to Productivity	Cooperative/Labor Management Relations
Highest rated	Hong Kong (60)	Hong Kong (64)	Hong Kong (58)	Singapore (63)
US	48	60	53	51
UK	52	61	51	55
Denmark	34	33	45	61
Sweden	23	30	38	58
Germany	26	24	41	53
Korea	34	52	44	39
Chile	53	62	49	49
Argentina	40	41	37	46
Brazil	43	47	37	45
Lowest rated	Finland (22)	Ireland (21)	Ecuador (27)	France (33)

Source: Tabulated from World Economic Forum/Harvard Center for International Development, Global Competitiveness Report 2000, indicators 6.09, 6.10, 6.11, 6.12.

What is striking in the GCR ratings is that the advanced countries that score high in competitiveness and do well in cooperative labor management relations have such low scores in government labor regulations and/or collective bargaining. The most striking case in point is Germany. Germany has the lowest rating in labor institutions scores but is the number 3 country in the 2000 GCR measure of current competitiveness and is the number 15 country in growth competitiveness – far ahead of the dozens of LDCs with greater labor institution scores, reflecting the lack of regulations and protection of labor.

PROPERTY PROTECTION GOOD/LABOR PROTECTION BAD?

That both the Fraser index and the Global Competitiveness Report give advanced countries lower scores than LDCs in labor market institutions, with the noted exceptions, but give those countries higher scores in economic freedom or competitiveness overall and in property rights reflects the way these groups and economists in general view the rules and regulations of different markets. Protection for property rights through laws and independent legal systems are coded as positive for economic freedom/competitiveness while legal protections of labor are coded as inimical to economic freedom/competitiveness. If this coding was correct, and if economic freedom is indeed associated with economic success, as the developers of the indices believe, aggregate economic performance should be positively correlated with both the indicators of legal structure/property rights and the indicators of labor institutions/policies. Over time, improvements in economic freedom scores due to better protection of property and less protection of labor should be associated with improved market performance. Labor market “reforms” that reduce regulations and limit the economic power of labor institutions such as trade unions should improve outcomes.

What does the data say in these regards?

To see how economic outcomes vary with the labor market and property rights indicators, I regressed the log of GDP per capita on the relevant Fraser Institute indicators. The results of these regressions are given in Table 6. Line 1 shows that for all countries, the log of GDP per capita is positively significantly related to the law/property rights index but it is **negatively** related to the labor index. Taken at face value, countries with greater protection of property rights have higher levels of GDP per capita, but so too do countries with greater protection of labor. Dividing countries by whether or not they are developed, the regressions give significant positive coefficients for the legal protection/property rights indicator for both advanced countries and LDCs. The coefficients on the labor institution differ greatly however, with a significant negative coefficient for LDCs versus an insignificant positive coefficient for advanced countries. This suggests that LDCs might do better with greater labor protections while advanced countries might do better with somewhat less protection. Since level of economic advancement divides the sample by the outcome variable, the separate regressions provide at best information about the form of relationships at different levels of development rather than estimates of some permanent structural relation.

TABLE 6
 COEFFICIENTS (STANDARD ERRORS) FOR THE CROSS-SECTION RELATION
 BETWEEN LABOR AND LEGAL/PROPERTY RIGHTS INDICES AND ln GDP
 PER CAPITA AND GINI COEFFICIENTS, 2000

Dependent variable	Labor		Legal/Prop		R2	# Obs
In GDP per capita						
All Countries	-0.12	(0.04)	0.38	(0.02)	0.77	74
Advanced	0.03	(0.02)	0.12	(0.02)	0.61	27
LDCs	-0.20	(0.06)	0.33	(0.05)	0.54	47
Gini Coefficient						
All Countries	2.30	(0.92)	-2.88	(0.51)	0.35	73
Advanced	3.30	(0.86)	-1.34	(0.96)	0.40	26
LDCs	1.48	(1.46)	-3.80	(1.11)	0.22	47

Source:

GDP per capita in purchasing power parity terms, from UNDP, *Human Development Report 2002* (Oxford, NY, 2002), table 12.

Gini Coefficients, UNDP, *Human Development Report 2002* (Oxford, NY, 2002), table 13.

Additional data for countries with missing Gini coefficients.

Taiwan, www.gio.gov.tw/info/taiwan-story/economy/edown/table/table-10.htm

New Zealand and Singapore, <http://www.singstat.gov.sg/papers/seminar/income2000.pdf>

Argentina, Damil, Mario, Roberto Frenkel, Roxana Maurizio, *Argentina Una Década de Convertibilidad*, Oficina Internacional del Trabajo (Santiago Chile, 2002), p 75, cuadro 11

Trinidad and Tobago, <http://gold.sdn.org.ghdr/Box1.1.html>

Labor institutions/regulations are related to many other outcomes as well as to levels of GDP per capita, in some cases reducing desirable outcomes and other cases increasing desirable outcomes. Diverse studies show significant links between labor institutions and such labor market outcomes as duration of joblessness, tenure, as well as to the distribution of earnings and turnover rates (Blank 1994; Freeman; 1994 Blau and Kahn, 2002). Of these relations, perhaps the most important is the impact of labor institutions on income distribution. The regressions in Table 6 under the heading Gini coefficient estimate the relation between the labor institution and legal/property rights measures and that widely used measure of inequality in my cross-country data set. The positive coefficient on the labor indicator shows that greater economic freedom in the labor market (= less labor protection) is associated with higher inequality, albeit only weakly for LDCs. The negative coefficient on the legal/property rights indicator shows that greater legal protection of property rights is associated with less inequality. Again, greater labor protection and greater property protection have similar effects on outcomes, rather than the opposite effects that their coding might suggest.

The basic pattern underlying these results can be seen in a simple diagram. Figure 1 graphs the index of labor market institutions (panel A) and the index of legal structure/property rights (panel B) against log GDP per capita (LGDP). The scatter plot in panel A shows that labor institutions are essentially unrelated to GDP per capita. It also shows a substantial diversity in the labor institu-

FIGURE 1A
LABOR INDEX BY LGDP

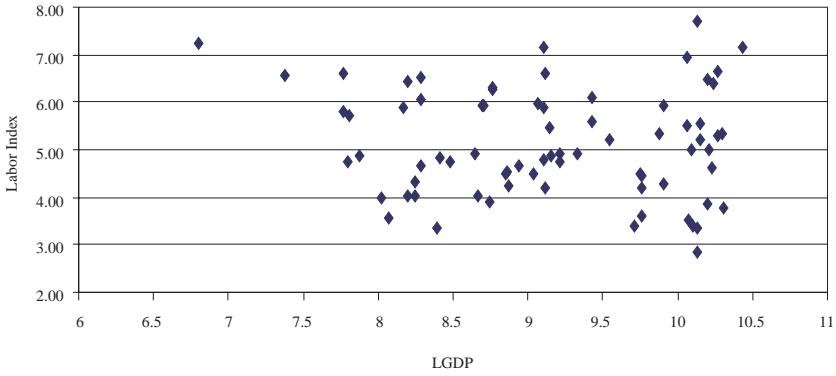
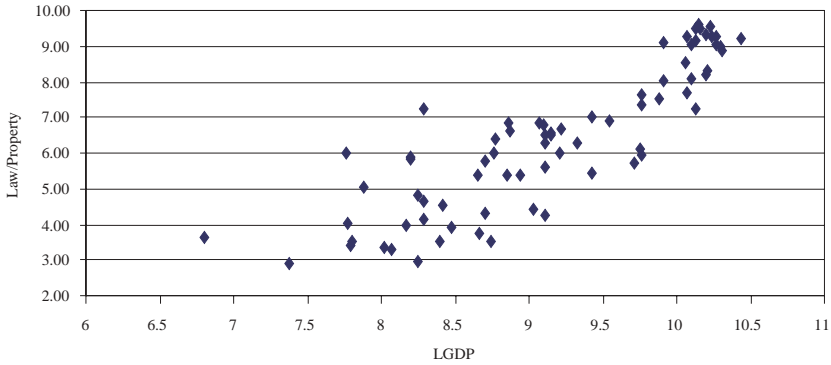


FIGURE 1B
LAW/PROPERTY RIGHTS BY LGDP



tion indicator among high GDP countries. This reflects the fact that the Fraser indicator gives Germany the least market-friendly set of labor institutions in the world, followed by France, Sweden, and Denmark whereas it gives several LDCs market friendly labor systems, Thailand, Jordan, Malaysia. By contrast, panel B shows a powerful positive link between legal protection/property rights and GDP per capita and a strong clustering of the legal structure/property rights indicator among advanced countries.

LONGITUDINAL ANALYSES

Cross-section country regressions suffer from the possibility that unobserved country factors underlie both independent and dependent variables. The natural way to eliminate such (fixed) factors is to examine within-country changes in the labor and other indices and in outcomes. This is possible for the broad eco-

conomic freedom index produced by the Fraser Institute but not readily doable for more detailed indices. Accordingly, I estimated a fixed effect model using the chain-weighted summary index of the economic freedom index that the Fraser Institute has developed to facilitate time series analysis. (Fraser Institute, Economic Freedom of the World, 2000 Annual Report, exhibit 4) This index is available at five year periods from 1970 to 2000 for over 110 countries. It corrects the historical freedom indices for changes in the information used to calculate them using a chain-weighted procedure.

As the first step in my fixed effects analysis, I regressed the log of GDP per capita on the contemporaneous economic freedom index and year and country dummy variables. This gives a comparative statics picture of the link between the index and GDP per capita, conditional on the fixed country effect. Then I regressed log of GDP per capita on its value five years earlier and on the economic freedom index at that time, again with year and country dummies. This captures any disequilibrium growth patterns in the data. The results in the first line of Table 7 show that when countries raise their economic freedom index, they gain in economic performance. But decomposing the sample into advanced countries and LDCs in the second and third lines shows that the positive relation between the level/growth of GDP and the increased freedom index holds only for the LDCs. Among advanced countries, changes in freedom indices had no statistically discernible impact on GDP per capita. What might explain this divergent pattern?

TABLE 7
COEFFICIENTS (STANDARD ERRORS) FOR THE LONGITUDINAL RELATION
BETWEEN ln GDP PER CAPITA AND AGGREGATE ECONOMIC FREEDOM INDICES,
AT FIVE YEAR INTERVALS, 1970-2000

	Index	Index (-5)	Ln GDP/capita (-5)	Country Dummies	Year Dummies	R2	N
1. All	.035 (.014)			X	X	.971	667
2. LDC	.054 (.016)			X	X	.954	473
3. Advanced	.007 (.030)			X	X	.889	194
4. All		.031 (.014)	0.706 (.033)	X	X	.971	550
5. LDC		.044 (.015)	0.624 (.045)	X	X	.980	384
6. Advanced		.012 (.014)	0.854 (.040)	X	X	.976	166

Source: Economic Freedom Index, Fraser Institute, *Economic Freedom of the World, 2000 Annual Report*, Exhibit 4 A Chain-Weighted Summary Index.

GDP per capita, Alan Heston, Robert Summers and Bettina Aten, Penn World Table Version 6.1, Center for International Comparisons at the University of Pennsylvania (CICUP), October 2002.

I hypothesize that increases in the aggregate economic freedom index among LDCs reflects changes in institutions like property rights which are critical for an advanced economy to succeed and to some basic labor protections that may also be critical to progress while increases in the index among advanced countries reflects more marginal changes around strong protection of property and labor. This is consistent with the cross-section finding that both property protection and labor regulations are positively associated with GDP per capita among LDCs while only property protections are significantly associated with higher GDP among advanced countries, but with a smaller coefficient than for LDCs. Put differently, my proposed explanation is that changes in the indices among LDCs are operating on a different margin than changes in indices among advanced countries. This interpretation is consistent with the general finding from studies of various labor interventions in advanced countries, ranging from the minimum wage to temporary contracts, that changes in these regulations have relatively modest effects on employment outcomes. But absent detailed indices for labor regulations over time, I cannot test this explanation for the cross-country data.

CONCLUSION

This study has documented that measures of labor protections/regulations have similar relations with GDP per capita and inequality as do measures of legal protection/property rights; and has found that improvements in economic freedom indices in LDCs but not in advanced countries are associated with increased GDP per capita. In addition, I find that indices of labor market institutions vary greatly among successful economies while indices of property rights/legal structures are more alike among those economies.

One interpretation of these findings is that there is a causal link from income per capita to greater protections for capital and labor – that these protections reflect an income effect with people “purchasing” greater protections with economic development. The historic pattern of increased labor protections with economic growth in advanced countries suggests that this may be the key route of causality for the link between labor protections and output per capita. If this is the case, the safest reading of the results linking output per capita and labor regulations is that, while labor protections may not contribute to economic growth, they are no impediment, either.

A bolder interpretation is that the causality runs from greater protections for capital and labor to economic outcomes – that these protections give people the message that their investment and work activities will in fact benefit them, inducing greater investments in human capital, physical capital, and greater productive effort. There is substantial evidence that labor institutions affect inequality in a causal manner, but little compelling evidence that labor protections/regulations contribute to growth. The longitudinal analysis of the link between the economic freedom indices and output per capita provides some support for a causal link between legal protection/property rights and output per capita, at least for LDCs.

These uncertainties, the evidence rejects the commonly held view that protection of labor is differentially associated with economic success (or inequal-

ity) than protection of property. The most economical explanation of the observed patterns is that protection of labor and protection of property both contribute to economic development, with the higher variation in labor institutions indicating a greater leeway for institutional variation in the treatment of labor than in the treatment of capital. More complex explanations of the observed patterns are also possible.

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