Globalization and the Labor Market

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Does globalization affect labor market outcomes? Can labor market policies mitigate or offset the effects? Would these policies have important side effects on efficiency? This article addresses these questions through an analytical survey of the literature, including several studies under preparation. Some of the studies use new cross-country databases of wages and other labor market indicators. Although all the answers should be considered tentative, some patterns emerge. Different aspects of globalization have different consequences. In the short run wages fall with openness to trade and rise with foreign direct investment. But after a few years the effect of trade on wages becomes positive. Foreign direct investment also increases (substantially) the returns to education. Social protection programs are effective in reducing inequality. Minimum wages, public sector employment, and core labor standards are not. Between these two extremes, collective bargaining works mainly for the middle class. Social protection programs do not adversely affect efficiency, but high public sector employment and trade union membership are associated with weaker performance in the context of adjustment.

Integration with world markets bears the promise of prosperity for developing and transition economies, but it could also be a source of increased hardship. In principle, the unleashing of market forces associated with globalization should increase productivity and possibly economic growth. But many fear that the pendulum will swing too far toward efficiency, to the detriment of equity. Low wages and limited workers' rights could be necessary to attract foreign investment and increase export market shares, and these would be to the disadvantage of workers as a group. Moreover, inequality among workers could increase if greater economic integration benefits those with the skills needed to adjust to the new technologies and organizational structures, while the rest are left behind. These are the fears that lie behind such popular concepts as the "race to the bottom" and the "digital divide."

   This pessimistic view contrasts sharply with predictions by economists. One of the most widely used international trade models suggests that lower tariffs and transport

costs should push each country to specialize in the production of the goods for which it has a comparative advantage. In relative terms, skilled labor is the abundant factor in the industrial world and unskilled labor the abundant factor in the developing world. Globalization should therefore be associated with an increase in the relative demand for skilled labor in industrial countries and unskilled labor in developing economies. Based on this view, economic integration could increase inequality within industrial countries—or increase unemployment if labor regulations prevented a downward adjustment in the wages of unskilled workers (Wood 1994). But it should reduce inequality within developing economies. In fact, the labor-intensive growth associated with greater openness and deregulation is often seen as one of the main avenues toward poverty reduction (World Bank 1990).

Both views about the effects of globalization are plausible, and both can be articulated under the form of rigorous economic models. That is why their relevance can be assessed only on empirical grounds. Unfortunately, the available evidence is scattered. The experience of East Asia in recent decades suggests that export-oriented growth in labor-intensive economies is indeed associated with a dramatic reduction in poverty (World Bank 1993). But there has been no systematic decline in inequality in East Asia, as the simple international trade model would have predicted. In fact, inequality has increased dramatically in China. Several studies suggest that wage inequality increased in Latin American countries as they liberalized foreign trade. Although the interpretation of the findings of these studies is open to debate, all the studies show an increase in the returns to skill over periods of economic reform and increased openness, despite differences in data sets and methodologies.[1] This ambiguity in the empirical evidence warrants a closer look at the merits of the two views already outlined.

This article analyzes in more depth the relationship between globalization and the labor market. It addresses three questions: Does globalization have systematic effects on labor earnings? Are domestic labor market policies an effective tool for mitigating or offsetting these effects? Would labor market policies have important side effects on economic efficiency? These questions are addressed mainly from the perspective of developing and transition economies. In these countries wage earners do not necessarily represent a majority of the labor force, as many workers are self-employed or engaged in household enterprises. In addition, the ability to enforce labor market policies is limited, and efforts to enforce such policies often do not reach wage earners in the informal sector.

Although the article presents some new empirical evidence, it should be seen as an analytical survey. The new evidence stems from a series of studies in preparation or recently completed (a more detailed discussion of the data sets and methodologies used in each case can be found in the studies). By putting together some of the new evidence as well as the main findings from other studies, the article tries to provide a consistent story line. Although the answers are tentative, a story line emerges.

Does Globalization Affect Labor Market Outcomes?

Claims that globalization leads to a "race to the bottom"—or, conversely, to greater demand for unskilled labor—implicitly assume that the equilibrium level of labor earnings is affected by international trade and foreign direct investment. But for the large fraction of the labor force that is self-employed or works in household enterprises in many developing economies, globalization is unlikely to have a direct, visible impact on earnings. International trade and foreign direct investment usually involve enterprises that employ salaried workers and often operate in the formal sector. Access to world markets, import penetration, or capital inflows should therefore have the most direct impact on the demand for labor by those enterprises. Competition in the labor market could subsequently translate this direct impact into changes in expenditure or earnings among the self-employed or unpaid family workers. But the first-order effect of globalization should be noticeable in the level of wages, particularly formal sector wages.

A recently released data set, assembled by Freeman and Oostendorp (2000) based on the October Inquiry, can be used to analyze the links between globalization and wages. The October Inquiry, conducted by the International Labour Office (ILO) since 1924, requests data on wages by occupation from governments around the world. These data have rarely been used for research because they suffer from comparability problems. Occupations (teacher, bricklayer, and the like) are defined quite precisely. But depending on the country and occupation, the figures submitted by governments might refer to wages or to earnings. They might be legal minimums or maximums or actual averages or medians. Figures could refer to men, women, or both. The reference period might be the hour, day, week, month, or something else.

Freeman and Oostendorp recalibrated these data to make them comparable, assuming a stable relationship between different wage measures. The data used in this article correspond to the average monthly wages of men, measured in current dollars adjusted for purchasing power parity (PPP). The earlier observations correspond to 1983, but the occupations for which data are available vary across countries and years. An effort is under way to extend the recalibration back to 1953.

To assess whether globalization is associated with a "race to the bottom," wage levels can be regressed on openness indicators.[2] In table 1 the explained variable is the log of wages by occupation, based on the data set assembled by Freeman and Oostendorp. In all the regressions reported in this table, there is a maximum of one observation per country, year, and occupation. A key explanatory variable is the ratio of trade to gross domestic product (GDP), but three other openness indicators are considered. One is simply a variant of this ratio, in which PPP dollars (rather than current dollars) are used to measure the numerator and the denominator. Another indicator, constructed by Sachs and Warner (1995), focuses on economic policies. An economy is considered open if it meets five criteria: low tariffs, limited coverage of

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Table 1. Wages by Occupation and Openness

Explanatory variable			Explained variable: log of wages by occupation (PPP dollars)					
Ratio of trade to GDP	−0.125***	−0.284***						
(based on current dollars)	(−7.41)	(−14.74)						
Ratio of trade to GDP			−0.017	−0.318***				
(based on PPP dollars)			(−0.78)	(−11.73)				
Open economy (yes = 1)					−0.131***	−0.046***		
					(−14.18)	(−4.25)		
Ratio of foreign direct investment to							1.062***	1.178***
GDP (based on current dollars)							(8.71)	(8.38)
Log of GDP per capita (PPP dollars)		0.662***		0.794***		0.718***		0.691***
		(37.92)		(25.80)		(32.61)		(39.26)
Political liberty index (scale: 0–1)		0.103***		0.110***		0.065***		0.102***
		(6.53)		(4.82)		(3.63)		(6.36)
Economic liberty index (scale: 0–1)		−0.129***		−0.052		−0.193***		−0.212***
		(−3.39)		(−0.97)		(−4.10)		(−5.45)
Country effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Occupation effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.438	0.456	0.465	0.465	0.446	0.450	0.437	0.454
F-test	261.1	227.9	196.3	166.7	212.0	192.3	246.7	219.2
Number of observations	59,292	48,934	38,852	33,647	45,884	41,557	56,317	47,506

Note: All regressions are estimated using fixed effects. All explanatory variables are lagged one year, with *t*-values reported in parentheses. Three asterisks denote statistical significance at the 1 percent level.

Source: Author's calculations based on work in progress by Freeman and others (2001). Data on wages by occupation are from Freeman and Oostendorp (2000); data on the ratio of trade to GDP in PPP terms are from the Penn World Tables (Heston and others 2002); data on openness are from Sachs and Warner (1995); data on political liberties are based on the Polity III index as rescaled by Rodrik (1999); the economic liberty index is produced by the Fraser Institute (Easton and Walker 1992), rescaled; all other data are from the World Bank.

nontariff barriers, no marketing boards, no central planning, and a small or nonexistent black market premium for the exchange rate. The last openness indicator considered is the ratio of foreign direct investment to GDP; for this indicator both the numerator and the denominator are measured in current dollars.

All the regressions reported in table 1 are estimated using fixed effects. This method is the same as including dummy variables for each country, year, and occupation. The coefficients on these dummy variables remove the effect of unobservable characteristics, so that the estimated coefficient on an openness indicator measures the impact of the change in exposure to world markets on the change in wage levels. The implicit hypothesis when assessing the sign and significance of this coefficient is that globalization has a systematic effect, in one direction or the other, on all the wages considered in the analysis. A significantly negative coefficient should be interpreted as evidence that wages are lower in more open economies, everything else equal—or, equivalently, that greater openness will exert a downward pressure on wages.

Regressions of this sort raise several important problems. Among the most important are causality, omitted variables, and structural stability. If a relationship is found, it could be difficult to tell whether openness has an effect on wages, or the other way around. To address this problem, all the explanatory variables in table 1 were lagged one year, meaning that the key coefficient measures the relationship between openness in any one year and the wage level in the year after.

Because of omitted variables, it could well be the case that some other economic force explains both openness and the wage level, so that the estimated relationship is misleading (and probably biased). To address this problem, all regressions were rerun with the addition of three control variables, accounting for the level of economic development, political liberty, and economic liberty. The inclusion of political liberty was based on previous evidence on its relevance when explaining wage levels across countries (Rodrik 1999). Economic development is measured by the log of GDP per capita in PPP dollars, political liberty by the Polity III index, and economic liberty by the Fraser index. Other regressions (not reported in this article) consider alternative development indicators, such as the educational attainment of the population or the urbanization rate. Lags of one year were used for these variables as well. The estimated impact of globalization on wages did not change substantially when these additional controls were included in the regressions, but its statistical significance fell as the number of usable observations declined.

There would be structural stability problems if the relationship between globalization and wages differed across subsets of countries. In particular, the simple international trade model sketched in the introduction predicts that the impact of openness on wages should differ between industrial and developing economies because of the difference in skill composition between their labor forces. All regressions were therefore rerun with industrial countries excluded from the sample. The estimated coefficients

remained very similar in all cases (the results are not reported herein). But their statistical significance declined because of the smaller sample.

The results reported in table 1 suggest that in the short run globalization has a mixed impact on wages. Openness to trade, as captured by trade flows or trade liberalization policies, is associated with lower wages by occupation. Except in one specification, all the effects are statistically significant. In addition, the size of the effects appears to be considerable. In the specifications that control for the level of economic development and political and economic liberty, a 20-percentage-point increase in the ratio of trade to GDP leads to a 5–6 percent decline in wages. According to the indicator constructed by Sachs and Warner, the impact is similar when an economy opens up. In contrast, foreign direct investment appears to have a positive impact on wages. When foreign direct investment as a share of GDP increases by one percentage point, wages grow by roughly 1 percent.

A simple way to test whether globalization also leads to increased inequality among workers is to repeat the analysis in table 1 using indicators of wage dispersion as the explained variable. In table 2 the dispersion indicator is the standard deviation of the log of wages by occupation based on the data set assembled by Freeman and Oostendorp. This standard deviation can be interpreted as the typical gap, in relative terms, between wages in any occupation and the average wage. The higher the standard deviation, the greater the inequality among workers. The regressions in table 2 include a maximum of one observation per country and year.

Returns to education provide an alternative and potentially more telling indicator of wage dispersion. The larger the returns, the wider the earnings gap between skilled and unskilled workers. A variety of studies around the world have tried to estimate the impact of an additional year of education on labor earnings, using individual records from household or labor force surveys. Many of these studies rely on a Mincerian earnings function, explaining the log of earnings as a function of the number of years of schooling, the number of years of potential work experience, and the square of the years of potential work experience. These studies use data sources of different coverage and quality, with inconsistent measures of labor earnings. The Mincerian equations they report include different control variables and involve different subsets of workers (for example, private sector workers, urban workers, or male workers). But as long as the "noise" in the estimated returns to education is not correlated with openness or other explanatory variables in the regressions, those estimated returns provide a valuable source of information for studying the impact of globalization on labor market outcomes.

In table 3 the dispersion indicator is the percentage increase in labor earnings associated with one additional year of education. This indicator is based on a new (and preliminary) data set on returns to education that is being collected as part of work in progress, building on previous efforts by Psacharopoulos (1994). The data set reports the estimated coefficient for the years of schooling in the "preferred"

Table 2. Dispersion of Wages by Occupation and Openness

Explanatory variable	Explained variable: standard deviation of the log of wages by occupation							
Ratio of trade to GDP	0.052*	0.025						
(based on current dollars)	(1.88)	(0.68)						
Ratio of trade to GDP			−0.028	−0.056				
(based on PPP dollars)			(−0.76)	(−1.04)				
Open economy (yes = 1)					−0.008	−0.006		
					(−0.46)	(−0.29)		
Ratio of foreign direct investment to							0.295	−0.171
GDP (based on current dollars)							(1.31)	(−0.60)
Log of GDP per capita		−0.052		0.012		−0.045		−0.055
(PPP dollars)		(−1.46)		(0.20)		(−0.99)		(−1.50)
Political liberty index (scale: 0–1)		0.034		0.015		0.021		0.032
		(1.10)		(0.35)		(0.60)		(1.02)
Economic liberty index		−0.067		−0.176*		−0.174*		−0.063
(scale: 0–1)		(−0.91)		(−1.70)		(−1.84)		(−0.81)
Country effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of occupations considered	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.001	0.303	0.000	0.001	0.012	0.254	0.019	0.291
F-test	1.95	1.35	1.37	1.30	1.40	1.57	2.53	1.31
Number of observations	858	642	575	445	661	535	784	611

Note: All regressions are estimated using fixed effects. All explanatory variables are lagged one year, with *t*-values reported in parentheses. An asterisk denotes statistical significance at the 10 percent level.

Source: Author's calculations based on work in progress by Freeman and others (2001). Data on wages by occupation are from Freeman and Oostendorp (2000); data on the ratio of trade to GDP in PPP terms are from the Penn World Tables (Heston and others 2002); data on openness are from Sachs and Warner (1995); data on political liberties are based on the Polity III index as rescaled by Rodrik (1999); the economic liberty index is produced by the Fraser Institute (Easton and Walker 1992), rescaled; all other data are from the World Bank.

Table 3. Returns to Education and Openness

Explanatory variable	Explained variable: additional earnings per year of schooling (percent)							
Ratio of trade to GDP	3.151*	2.420						
(based on current dollars)	(1.88)	(0.90)						
Ratio of trade to GDP			2.545	0.475				
(based on PPP dollars)			(1.45)	(0.16)				
Open economy (yes = 1)					0.258	−0.088		
					(0.41)	(−0.10)		
Ratio of foreign direct investment to							50.91**	54.56**
GDP (based on current dollars)							(2.45)	(2.03)
Log of GDP per capita		−3.091*		−0.412		−3.229*		−3.085
(PPP dollars)		(−1.68)		(−0.19)		(−1.69)		(−1.62)
Political liberty index		−2.224		−2.382		−3.260*		−2.289
(scale: 0–1)		(−1.43)		(−1.52)		(−1.93)		(−1.46)
Economic liberty index		−0.628		−1.336		−1.003		−1.094
(scale: 0–1)		(−0.19)		(−0.34)		(−0.27)		(−0.33)
Country effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.008	0.072	0.011	0.087	0.028	0.083	0.026	0.110
F-test	1.94	1.80	1.70	2.10	1.78	2.04	2.24	2.07
Number of observations	507	352	462	318	503	340	432	344

Note: All regressions are estimated using fixed effects. All explanatory variables are lagged one year, with *t*-values reported in parentheses. Significant coefficients at the 10 and 5 percent levels are indicated by one and two asterisks, respectively.

Source: Author's calculations based on work in progress by Freeman and others (2001). Data on the ratio of trade to GDP in PPP terms are from the Penn World Tables (Heston and others 2002); data on openness are from Sachs and Warner (1995); data on political liberties are based on the Polity III index as rescaled by Rodrik (1999); the economic liberty index is produced by the Fraser Institute (Easton and Walker 1992), rescaled; all other data are from the World Bank.

specification in each of the studies available. For some countries and years no estimate is available, perhaps because no household or labor force survey was carried out in that year, because no study was conducted, or simply because the Mincerian approach was not used. For some other countries there may be many estimates for a single year. As long as these estimates come from different studies, they are all included in the data set. As a result, there can be several observations per country and year in the regressions in table 3, but missing values are common.

The specification of the regressions in tables 2 and 3 is the same as that in table 1, with one exception. In the data set assembled by Freeman and Oostendorp the number of occupations for which wage data are available varies substantially across countries and years. The standard deviation of the log of wages is sensitive to the number of occupations for which wage data are available. At the limit, if there was only one observation for a specific country and year, the estimated standard deviation would be equal to zero because there would be no difference between the only observed wage and the average wage. To correct the potential effects of this measurement error, the regressions in table 2 include the number of occupations considered in each country and year as an additional explanatory variable.

According to the results reported in table 2, globalization has no impact on the dispersion of wages across occupations. The sign of the coefficient of interest varies across specifications and is almost never statistically significant. There also appears to be no relation between openness to trade and returns to education. But according to the results reported in table 3, foreign direct investment is associated with a substantial increase in the labor market premium for skill. If interpreted literally, the coefficients in table 3 mean that a one-percentage-point increase in foreign direct investment as a share of GDP is associated with a five-percentage-point increase in the returns to an additional year of schooling. This suggests that the "digital divide" effect, if it does exist, operates through the technology embedded in foreign capital rather than directly through foreign trade. This finding is consistent with microeconomic evidence on the effects of *maquiladoras* in Mexico (Feenstra and Hanson 1997).

The results in tables 1, 2, and 3 refer to impacts over one year. Over longer periods the effects of globalization could be quite different. Figures 1 and 2 summarize the results of a series of regressions that are in the spirit of those in table 1 except that they involve longer time lags between the openness indicators and the level of wages. These regressions include both the ratio of trade to GDP (measured in dollars) and the ratio of foreign direct investment to GDP (also measured in dollars) among their explanatory variables. They also include controls for the level of development, political liberty, and economic liberty. Figure 1 reports the coefficients associated with the ratio of trade to GDP for time lags ranging from one year (as in table 1) to five years. Figure 2 reports the coefficients for the ratio of foreign direct investment to GDP over the same time range. The solid lines in the two figures correspond to the point estimate; the dotted lines indicate the 95 percent confidence interval. The point

Figure 1. Effect on the Wage Level of a One-Percentage-Point Increase in Trade as a Share of GDP
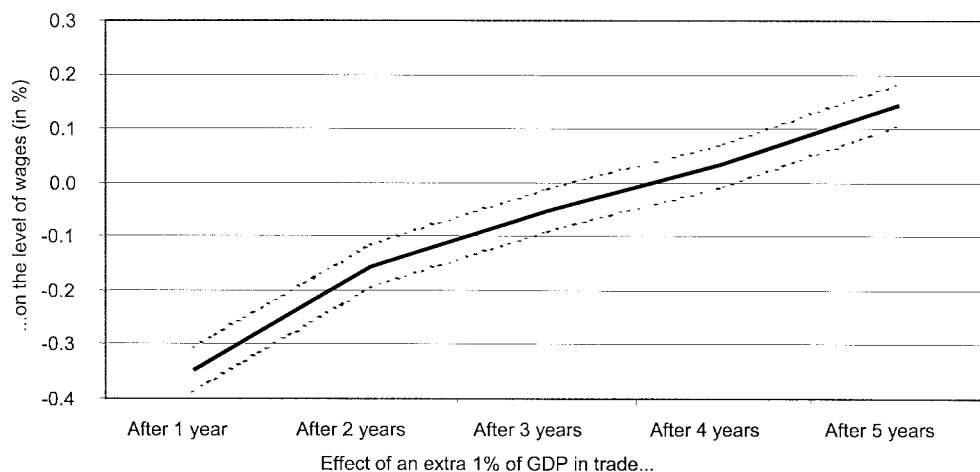
Note: This figure reports the results of a regression explaining the log of wages (in PPP dollars) as a function of the ratio of trade to GDP (in dollars). There is one observation per country, occupation, and year over the period 1983–98. The regression includes fixed effects for all countries, occupations, and years. It also controls for the ratio of foreign direct investment to GDP. The solid line reflects the point estimate of the coefficient of interest. The dotted lines indicate the 95 percent confidence interval.

Source: Author's calculations based on work in progress by Freeman and others (2001). Data on wages are from Freeman and Oostendorp (2000), and data on other variables from the World Bank.

estimates with a one-year lag differ slightly from the coefficients reported in table 1 because the two openness indicators were entered among the explanatory variables simultaneously in the regressions underlying figures 1 and 2.

Figure 1 shows that trade openness has a significantly negative impact on wages at first, but the effect evolves steadily and becomes positive in the medium term. The change in sign occurs after three years when the openness indicator is the ratio of trade to GDP. It occurs after five years if the indicator is the composite policy variable constructed by Sachs and Warner (1995). Figure 2 shows that the impact of foreign direct investment on wages remains positive but becomes statistically insignificant after five years.

In the longer term, openness should have an impact on wages through its overall effect on economic development. It is generally accepted that openness to trade is associated with higher growth in output per capita (see, for example, Sala-i-Martin 1997). The level of wages is, in turn, highly responsive to economic development. In all the regressions that control for economic development in table 1, the coefficient multiplying the log of income per capita is positive and highly significant. If openness is good for output growth, it should also be good for wage growth over the long run.

Figure 2. Effect on the Wage Level of a One-Percentage-Point Increase in Foreign Direct Investment as a Share of GDP
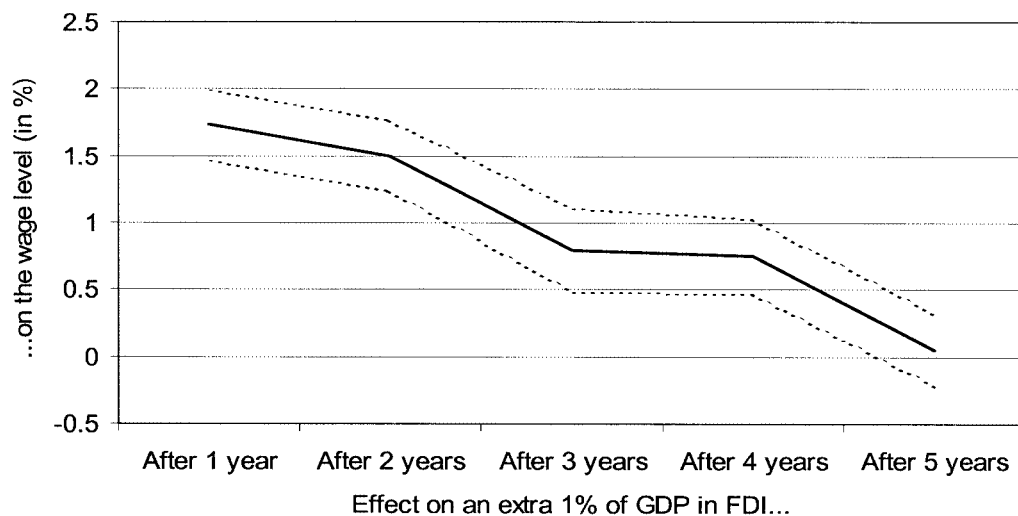

Note: This figure reports the results of a regression explaining the log of wages (in PPP dollars) as a function of the ratio of foreign direct investment to GDP (in dollars). There is one wage observation per country, occupation, and year over the period 1983–98. The regression includes fixed effects for all countries, occupations, and years. It also controls for the ratio of trade to GDP. The solid line reflects the point estimate of the coefficient of interest. The dotted lines indicate the 95 percent confidence interval.

Source: Author's calculations based on work in progress by Freeman and others (2001). Data on wages are from Freeman and Oostendorp (2000), and data on other variables from the World Bank.

For some workers, however, trade liberalization could lead to much hardship in the short run, even more than that suggested by the negative impact of openness on wages reported in table 1. Many jobs in protected (presumably inefficient) industries could be lost as a result of trade liberalization and market deregulation. For workers in those industries the resulting decline in earnings would exceed the decline in wages that can be predicted based on the estimated regressions. Optimistically, one could argue that laid-off workers will find other jobs. But jobs in protected industries are usually "better" jobs, probably because of some form of rent sharing (Azam and Ris 1995; Morrisson 1994). Moving to another job would presumably entail the loss of the "protection" premium.

Moreover, the experience of some "successful" reformers shows that unemployment rates may remain stubbornly high for long periods. In Chile, Mauritius, Poland, and Sri Lanka after a major liberalization effort, unemployment rates climbed to double digits and stayed there for more than a decade (figure 3). Of course, this outcome can always be blamed on adverse shocks and economic policy

Figure 3. Unemployment Rate in Successful Reformers
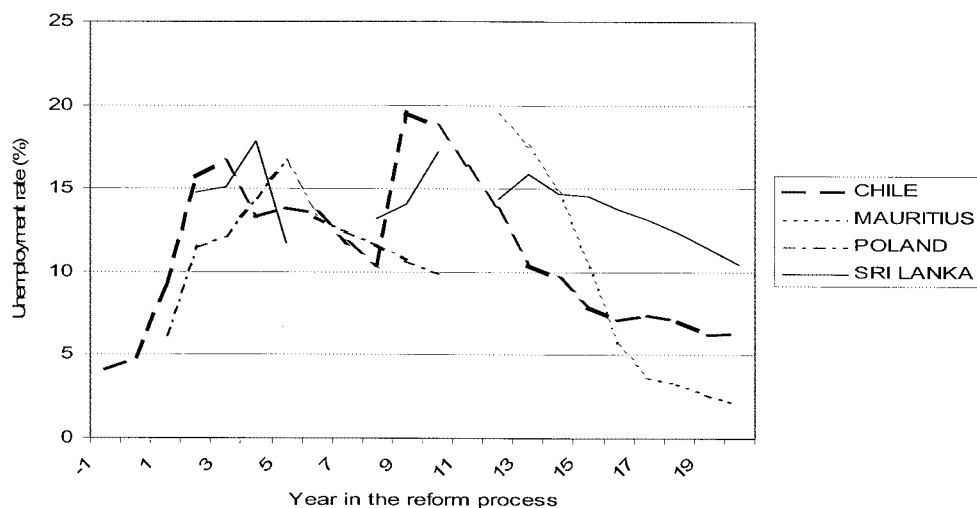
mistakes. But this criticism has limits, because these four countries are success stories in their own regions. Other developing economies would probably find it difficult to do much better.

Similarly, there are countries in which economic reforms (including greater openness to trade) could be associated with a sharper increase in returns to education than that suggested by the econometric results presented here. The experience of formerly socialist economies is revealing. These economies were characterized by highly compressed salary structures under central planning. But market forces widened the wage distribution, introducing a substantial premium for skill. This trend is illustrated in figure 4, which shows returns to education in formerly socialist countries in the years following the start of the transition to a market economy. For some of these countries the observed increase in returns to education amounts to a widening of the wage gap by 80 percentage points between workers with a college education and those with a primary education. Freeman and Oostendorp (2000) also report a marked increase in the dispersion of wages across occupations in formerly socialist economies.

In sum, openness should benefit workers in the long run and has the potential to benefit skilled workers even in the short run. But it may also penalize wage earners who are unskilled or work in protected activities. The net impact depends on

Figure 4. Returns to Education in Selected Transition Economies
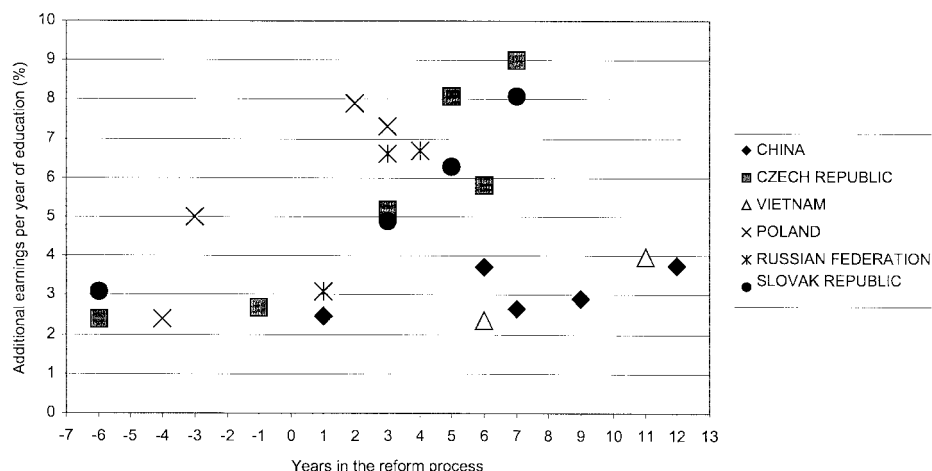
whether globalization is associated only with more trade or also with more foreign direct investment. Greater foreign direct investment has the potential to raise wages rapidly, but it may also widen the wage gap between skilled and unskilled workers. Another way to summarize the findings of this section is to say that openness may create winners and losers. Skilled workers are the most likely winners. Young workers, who can expect to benefit from wage growth in the long run, should also be among the winners. Unskilled and old workers, especially those in protected industries, could be the losers. This heterogeneity of outcomes has important political economy implications, analyzed in the section on the efficiency effect of labor market policies.

Can Labor Market Policies Mitigate the Effects of Globalization?

Because globalization has effects on labor market outcomes, it is only natural to consider policies specifically related to the labor market as a mechanism for mitigating those effects and, more broadly, their potential impact on inequality. In recent years there has been much debate about the merits and demerits of minimum wages, mandated benefits, collective bargaining, job security, and public sector employment in developing economies. There are even proposals to make the link between

labor market policies and openness explicit by including compliance with labor standards among the rules of the multilateral trading system. Those standards usually take the form of the seven core conventions of the ILO. A pertinent question is whether labor market policies, including core labor standards, are relevant in countries where only a fraction of the labor force is salaried and the government has limited ability to enforce regulations.

A first step in addressing this question is to review the available evidence on the effects of labor market policies and institutions on economic performance. Although the literature was limited to industrial countries until a short time ago, there are now many labor market studies on developing economies. Many of these studies are based on microeconomic data, which makes them more credible. The literature can be used to assess the potential of different labor market interventions to counter the effects of globalization.

Studies on minimum wages suggest that their impact is likely to be small. In many developing economies it is difficult to find a sizable spike in the distribution of wage earnings for full-time workers around the minimum wage (Maloney and Nuñez 2003). Even in countries with a relatively high administrative capacity, the fraction of full-time workers earning less than the minimum wage is roughly the same in the formal and informal sectors (Gindling and Terrell 1995). Not surprisingly, employment effects of minimum wages are difficult to find except when the minimum wage is very high compared with the average wage, as in Colombia (Bell 1997). An interesting "natural" experiment was the doubling of minimum wages in real terms in Indonesia in the early 1990s. During this period the elasticity of average wages to minimum wages at the provincial level was roughly 10 percent. Though there was a mild decline in total wage employment, the disemployment effect was substantial in small establishments (Rama 2001).

Studies on mandated benefits indicate that their cost might be shifted to workers, without modifying total compensation much. That workers "pay" for their benefits through lower cash earnings is not surprising when those benefits are perceived as a form of compensation. More strikingly, there also appears to be a one-to-one shift for benefits whose value is less clear from the workers' perspective. That was what happened with the reform of the social security system in Chile, when a reduction in contributions was offset by an increase in wage earnings even though benefits in the old system were only loosely related to contributions (Gruber 1997). Conversely, the cost of some benefits may be shifted to employers even if they are paid in cash and are therefore fully fungible with wages. That is what happened in Ecuador in the public sector and in unionized activities (MacIsaac and Rama 1997).

Trade unions seem to be effective in raising the wages of their members, but the union wage premiums are probably smaller in developing than in industrial countries. The reason may be that the labor movement is "subordinate" in many developing economies, where some trade unions were even instrumental in enacting wage

freezes during periods of economic adjustment (Nelson 1991). Thus the estimated union wage premiums range from negligible in Senegal to small in Mexico (Terrell and Svejnar 1989; Panagides and Patrinos 1994). It has been argued that South Africa is an exception, with an extraordinarily high union wage premium (Mwabu and Schultz 2000). But this high premium probably reflects self-selection more than bargaining power. An in-depth analysis of the South African data suggests that the wage premium is roughly 15 percent, much the same as in the United States. This analysis also shows that trade unions extend part of this premium to nonunionized workers in activities covered by industrial councils (Butcher and Rouse 2001).

The impact of separation costs is more controversial. A few countries have mandated job security, meaning that some employers (typically large ones) cannot dismiss a worker without explicit approval from the government. Because this approval is political, employers may be reluctant to hire workers under permanent contracts, for fear of being unable to fire them in bad times. There is evidence that the tightening of job security regulations depressed labor demand in India and Zimbabwe (Fallon and Lucas 1991). In most developing economies, however, separation costs take the form of mandatory severance pay: the employer must pay an indemnity to workers who lose their job through no fault of their own. This indemnity usually depends on wage and seniority. Based on cross-country data, it has been claimed that separation costs of this kind reduce employment (Heckman and Pagés 2000). But microeconomic data from Peru suggest that workers may "pay" for some of their separation package through lower wages (MacIsaac and Rama 2001).

Relatively few studies have looked at the impact of public sector employment on labor market outcomes. Where the formal sector is very small, as in Sub-Saharan Africa, public sector wages could have a substantial impact on private sector wages (Rama 2000). The fact that public sector jobs are "better" than their private sector counterparts could be at the root of "queuing unemployment," as in the Arab Republic of Egypt and Sri Lanka (Assaad 1997; Rama 2003). Public sector jobs could also serve as a form of insurance, especially in countries where intrahousehold transfers are substantial. This possibility has been suggested by Rodrik (2000), based on cross-country data.

This admittedly brief review of the literature suggests that labor market policies could have an impact on labor market outcomes and, more broadly, on inequality. But this impact is probably small and its direction is unclear. Higher minimum wages and stronger trade unions could raise the earnings of those who manage to keep their jobs but reduce labor demand and depress the earnings of those in the informal sector. Formal sector workers usually belong to the "middle class" in developing economies, whereas informal sector workers are more likely to be poor. More generous mandated benefits and higher separation costs could have a similar impact as long as workers do not fully pay for their coverage. Public sector employment

could benefit the middle class rather than the poor. Still, all these effects might be too small to make a difference.

Cross-country analysis can shed light on the impact of labor market policies on inequality more broadly. Several studies have used the database assembled by Deininger and Squire (1996) to explore the links between conventional indicators of inequality, such as the Gini coefficient, and a set of country characteristics. Among the explanatory variables used in those studies are the average educational attainment of the population and indicators of civil liberties, financial depth, and the concentration of land ownership (Li and others 1998). Labor market indicators have been largely ignored. Bourguignon and Morrisson (1998) appear to be the only researchers to have included a labor market variable among the determinants of inequality. But that variable—the ratio of labor productivity in manufacturing to that in agriculture—measures a labor market outcome rather than a labor market policy.

To redress this omission, the inequality indicators in the database assembled by Deininger and Squire can be paired with labor market indicators measuring the extent of government intervention in the labor market. Six inequality indicators are considered in what follows. Five refer to the share of each population quintile in total consumption or earnings, measured in logs. When data on both consumption and earnings are available, the consumption data are preferred. The sixth indicator is the Gini index for the distribution of consumption or earnings, also in logs. The actual data are from a revised and updated version of the Deininger and Squire data set.[3]

The labor market indicators considered are from a broader data set being constructed by Rama and Artecona (2002) and are computed as averages over five-year periods. They include the number of ILO conventions ratified by the country (all conventions and core conventions). They also include the most general minimum wage, measured as a percentage of the average labor cost per worker in manufacturing (the average labor cost is from establishment surveys and censuses). The extent of social protection is measured by the social security contributions paid by employers and employees as a percentage of the gross wage, by the fraction of GDP channeled through the social security system, and by the mandatory number of days of maternity leave with full pay for a first child born without complications. Three indicators are considered for the importance of collective bargaining: union membership as a percentage of the labor force, the coverage of collective bargaining agreements as a percentage of the salaried workforce, and the number of strikes and lockouts a year. The set of labor market indicators is completed by employment in the general government as a percentage of the labor force and the average government wage as a percentage of the average labor cost per worker in manufacturing.

Crude correlations between inequality indicators and labor market indicators, reported in table 4, suggest that most of the government interventions considered have

Table 4. Correlation Between Inequality and Labor Market Policies

Labor market indicator	Income or consumption share by quintile					
	Poorest	Second	Third	Fourth	Richest	Gini index
ILO conventions ratified	0.23*	0.24*	0.26*	0.25*	−0.33*	−0.28*
Core ILO conventions ratified	0.03	0.03	0.04	0.05	−0.11	−0.09
Minimum wage (% of average)	−0.02	0.04	0.04	0.05	−0.04	−0.01
Social security contributions (% of wage)	0.41*	0.40*	0.38*	0.36*	−0.42*	−0.42*
Social security revenue (% of GDP)	0.51*	0.52*	0.53*	0.52*	−0.53*	−0.50*
Days of paid maternity leave	0.36*	0.37*	0.37*	0.37*	−0.42*	−0.44*
Union membership rate (%)	0.24*	0.31*	0.38*	0.43*	−0.49*	−0.47*
Coverage of collective bargaining (%)	0.52*	0.55*	0.56*	0.58*	−0.57*	−0.58*
Number of strikes and lockouts	0.29*	0.27*	0.26*	0.25*	−0.27*	−0.30*
General government (% of labor force)	0.26*	0.38*	0.46*	0.53*	−0.56*	−0.52*
Government wage (% of average)	−0.17	−0.21	−0.22	−0.22	0.21	0.18

Note: The figures in the table are coefficients of correlation between inequality indicators and labor market policies. The number of observations varies from cell to cell depending on data availability. *Significant at the 10 percent level.

Source: Author's calculations based on work in progress by Rama and Ravallion (2001).

considerable redistributive effects. The vast majority of the correlation coefficients in table 4 are statistically significant. Government interventions in the labor market appear to be associated with a lower Gini index and also with a smaller share of consumption or income for the richest population quintile. Labor market interventions appear to increase the share of consumption or income for all other population quintiles, including the poorest one, even though very few among the poor have formal sector jobs. These results are affected by omitted variable bias, however, as the more elaborate analysis in table 5 shows.

The ideal approach to assess the impact of labor market interventions on inequality would be to regress the inequality indicators on the labor market indicators while controlling for other country characteristics. These country characteristics should include determinants of inequality considered in earlier studies, such as the average educational attainment of the population, civil liberties, financial depth, and the concentration of land ownership. A richer analysis should also consider the ratio of trade to GDP, the share of government consumption in GDP, and a variety of interactive and quadratic terms, to capture nonlinear relationships between inequality and its determinants. Unfortunately, labor market indicators are rarely available for the same periods as inequality indicators. Thus this ideal approach would reduce the number of observations that could be used in the regression analysis, sometimes dramatically.

Table 5. Correlation Between "Unexplained" Inequality and Labor Market Policies

	Income or consumption share by quintile					
Labor market indicator	Poorest	Second	Third	Fourth	Richest	Gini index
ILO conventions ratified	0.30*	0.26*	0.24*	0.23*	−0.25*	−0.26*
Core ILO conventions ratified	0.03	0.01	0.03	0.06	−0.03	−0.01
Minimum wage (% of average)	−0.22	−0.21	−0.20	−0.20	0.22	0.18
Social security contributions (% of wage)	0.31	0.29	0.27	0.21	−0.28	−0.29
Social security revenue (% of GDP)	0.32*	0.33*	0.30*	0.26*	−0.31*	−0.33*
Days of paid maternity leave	0.22	0.18	0.12	0.09	−0.06	−0.05
Union membership rate (%)	0.14	0.14	0.16	0.18	−0.17	−0.10
Coverage of collective bargaining (%)	0.24	0.33	0.48	0.60*	−0.44	−0.33
Number of strikes and lockouts	0.07	−0.05	0.04	0.02	−0.01	−0.13
General government (% of labor force)	0.13	0.14	0.14	0.13	−0.12	−0.12
Government wage (% of average)	0.08	0.06	0.03	0.03	0.04	−0.06

Note: The figures in the table are coefficients of correlation between "unexplained" inequality indicators and labor market policies. Unexplained inequality is measured as the residual of a regression linking each inequality indicator with a large number of explanatory variables, none of which is directly related to the labor market. The number of observations varies from cell to cell depending on data availability. *Significant at the 10 percent level.

Source: Author's calculations based on work in progress by Rama and Ravallion (2001).

The alternative considered here is to assess the correlation between labor market indicators and the inequality that is "unexplained" by country characteristics like those just mentioned. This alternative involves two steps. The first is to regress the inequality indicators on all country characteristics, including the interactive and quadratic terms. The second is to compute the correlation between the residuals of those regressions (the unexplained part of inequality) and the labor market indicators. The results of this second step are reported in table 5.

After other country characteristics are controlled for, only two (closely related) labor market indicators have a consistent impact on all inequality indicators: the number of ILO conventions ratified by the country and the share of GDP channeled through the social security system. The regulatory regime promoted by the ILO tends to be protective of workers and to include many benefits that are usually managed by social security administration. In fact, the correlation coefficient between the number of ILO conventions ratified and the share of GDP channeled through social security is quite high. Across all countries and periods covered in the database being constructed by Rama and Artecona (2002), the correlation coefficient reaches almost 0.6.

The only other labor market policy or institution showing a statistically significant correlation with inequality indicators is the share of the labor force covered by collective bargaining agreements. But the effect is significant only for the consumption or income share of the fourth quintile, the quintile to which many formal sector

workers in developing economies are likely to belong. The evidence in the previous section suggests that globalization may adversely affect specific groups of formal sector workers, at least in the short run. But it may affect other population quintiles even more adversely. Focusing on a labor market policy that works only for the second richest group in the population may not be the most effective way to reduce inequality.

All other labor market policies and institutions appear to be ineffective once the other determinants of inequality are controlled for. In particular, minimum wages and core labor standards have no significant impact on any of the inequality indicators. This irrelevance contradicts popular perceptions and casts doubt on the usefulness of including compliance with labor standards among the rules of the multilateral trading system. Public sector employment and public sector wages also appear to be ineffective in reducing inequality. The results in table 5 suggest that only the traditional instruments of social protection work.

Do Labor Market Policies Reduce Efficiency?

Although some labor market policies may be effective in mitigating the adverse impact of globalization on workers, their cost in economic efficiency should not be overlooked. All forms of redistribution entail some deadweight loss, and labor market policies should be no exception. But the deadweight loss may vary substantially across government interventions. To some extent that loss can be inferred from the previous section's review of the microeconomic evidence on the effects of labor market policies in developing economies. This review found an impact on employment for most types of labor market policies. Other things equal, the larger the impact, the bigger the deadweight loss. But the evidence is not precise enough to rigorously compare the efficiency costs of any two government interventions in the labor market. Again, cross-country analysis may be a more promising way to identify the basic regularities.

The long-run impact of labor market policies on economic efficiency can in principle be quantified using Barro regressions. These are relationships linking average growth rates across countries with some of the characteristics of those countries, including their economic policy choices (Barro 1997). This approach has been used to assess the consequences of trade, monetary, financial, fiscal, and other policies. But because of the lack of a reliable cross-country database of labor market indicators, it does not appear to have been applied to labor market policies. Cukierman and others (2001) have tried to fill this gap, using the information compiled by Rama and Artecona (2002). This section reports some of their preliminary estimates.

Besides the usual explanatory variables included in Barro regressions, Cukierman and others consider labor market indicators like those used in the previous section.

With the exception of the minimum wage, none appears to have a significant impact, positive or negative, on long-run growth. When the minimum wage is very low, an increase in this wage is associated with a higher growth rate. The effect vanishes when the minimum wage reaches roughly 20 percent of the average labor cost in manufacturing. Preliminary work on the transmission mechanism for this effect suggests two possible avenues. At a very low minimum wage, an increase is associated with higher educational attainment, a result consistent with investments in children's schooling being profitable but being constrained by lack of access to credit. An increase in the minimum wage, again from a very low level, is also associated with higher employment, a result that would make sense if employers had enough market power to set wages below their competitive equilibrium level.

The weakness of the effects of other labor market policies on long-run growth suggests that deadweight costs could be small or negligible. Such a conclusion would be consistent with the view that different labor market policies and institutions are associated with similar economic performances. In the words of Freeman (2000), the capitalist system is diversified rather than "single peaked." From this perspective, the main effect of these policies and institutions is on the distribution of labor market rents between workers and employers, not on economic efficiency. The long-run growth regressions by Cukierman and others (2001) provide some support for this view. But because of a lack of data, these growth regressions do not include separation costs among their arguments. Separation costs could in principle have greater efficiency effects. More important, an analysis of the medium-term impact of those policies and institutions on economic growth leads to a less sanguine conclusion.

A cross-country study of economic growth during periods of economic reform shows that some of the government interventions considered in the previous section can be associated with poor performance (Forteza and Rama 2001). This study compared output rates across countries with different degrees of labor market rigidity. The rigidity of labor markets was measured using an index that combines the minimum wage, the generosity of social security benefits, labor union membership, and the government share of the labor force. The comparison was run over four periods: long before (4–10 years) major economic reforms were launched, shortly before, shortly after, and long after. The timing of reforms was identified based on the accumulated volume of World Bank lending for structural and sectoral adjustment programs.

The results of this cross-country study are summarized in figure 5. The lines in this figure represent average growth rates for three groups of countries in the four phases of reform. The results are similar when controls for past performance and external shocks are taken into account. The figure confirms that labor market rigidity does not affect long-run performance, because the growth rates for all groups are very similar long before the reforms. But countries with rigid labor markets have a much worse economic performance in the years before the reforms are launched

Figure 5. Labor Market "Rigidity" and the Success of Reforms
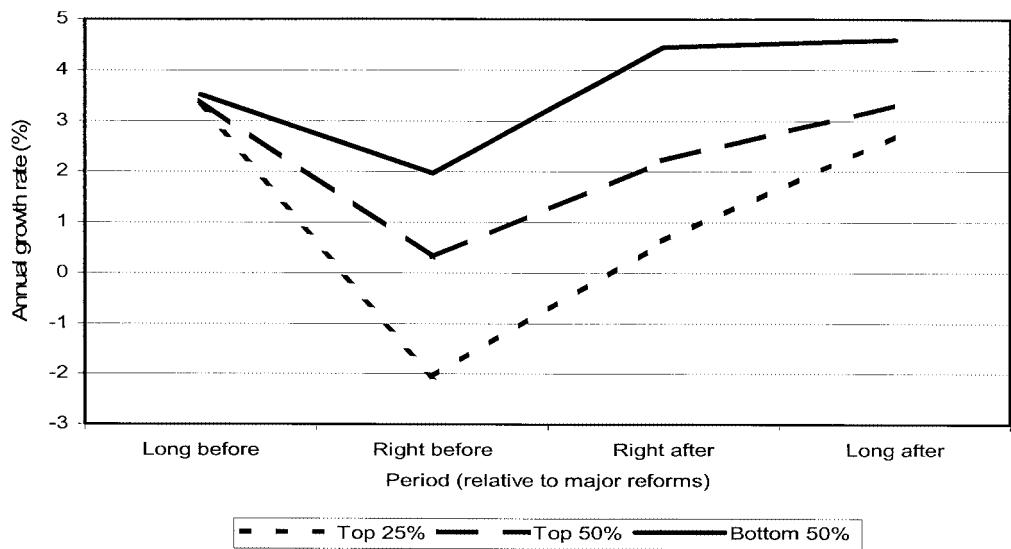
Note: The quantiles refer to an indicator of "actual" labor market rigidity, constructed combining the level of minimum wages, the social security contribution rate, the union membership rate, and the share of the labor force employed by the central government. The higher this indicator, the more "rigid" the labor market.

Source: Constructed by the author using data from Forteza and Rama (2001).

and a much slower recovery afterward. This pattern is consistent with countries with rigid labor markets reforming less often and later, which could explain why they do worse when they reform. Interestingly, this pattern is driven not by minimum wages or mandated benefits but by unionization and, especially, by government employment.

These results are consistent with a political interpretation of the role of labor market rigidity. In developing economies, public sector employees make up a large share of union membership. Workers in protected industries also tend to be unionized. These two groups stand to lose from such reforms as trade liberalization, market deregulation, and privatization of state-owned enterprises. The more powerful these groups are, the more likely that reforms will be delayed or adopted half-heartedly. Based on this political interpretation, figure 5 suggests that the payoffs to compensating those who stand to lose from globalization can be large. It also casts doubt on the wisdom of using public sector employment as insurance against the increased economic volatility from globalization: A high level of public sector employment may hamper the adoption of economic reforms later.

Political economy considerations raise interesting issues relating to the targeting of labor market policies. The analysis in the previous section suggests that social

protection could be an effective tool of redistribution, increasing the consumption or income share of the poorest quintiles of the population. The political economy argument emerging from the analysis in this section implies that transfers should be aimed at those who stand to lose more from globalization. These could be, for example, relatively unskilled wage earners in protected sectors. Offsetting the losses of these workers may be the key to the acceptance of trade liberalization and similar reforms. But wage earners in protected sectors are not among the poorest segments of the population in developing countries.

Policies aimed at mitigating the impact of job loss can be classified in two groups: one-time interventions and permanent programs. Among one-time interventions, generous compensation and assistance to those bound to lose their jobs have often been used to reduce resistance to privatization, trade liberalization, or market deregulation in industries where insiders are vocal and powerful (Haltiwanger and Singh 1999). If perfectly designed, compensation packages for redundant workers would make them indifferent to job loss, so that economic reforms would be Pareto optimal. But experience suggests that these packages, whose design is based on rules of thumb, can lead to substantial over- or undercompensation. A more sensible basis for determining the amount of compensation needed to achieve indifference is the analysis of microeconomic data on the earnings redundant workers could hope to make after separation (Assaad 1999; Chong and Rama 2001).

Developing economies have tried a variety of more permanent programs to help workers cope with job loss. A comparative study of Latin America considered five such programs: public works, training for the unemployed, mandatory severance pay, unemployment insurance, and forced savings (World Bank 2000). Table 6 shows that these programs have vastly different costs per assisted worker. The distribution of these costs among workers, employers, and taxpayers also varies substantially. From the point of view of this article, the most interesting feature of the table is the difference among beneficiaries. Although public works and training programs for the unemployed reach the poorest population groups, forced savings reach the richest. Mandatory severance pay and unemployment insurance fall in between. These differences should be kept in mind when thinking about targeting social protection programs in the context of integration with world markets.

Conclusion

This article has addressed some questions central to the policy debate today, offering answers based on an analytical review of the literature. Its few novel results are drawn from studies under preparation, and its value added (if any) is to make sense of the microeconomic and macroeconomic evidence available. What the article does is propose a story line consistent with all the bits and pieces of knowledge that have

Table 6. Income Support Programs for the Unemployed

Program and country	Workers legally covered by the program	Spending per beneficiary (U.S. dollars)	Cost of the program falls on	Share of beneficiaries by income or consumption quintile (%)				
				Poorest	Second	Third	Fourth	Richest
Public works in Argentina	All (in principle)	3,100	Taxpayers	78.6	15.3	3.5	2.1	0.4
Training for unemployed in Mexico	Eligible based on age and education	393	Taxpayers	69.9	15.5	8.1	5.0	1.5
Severance pay in Peru	Salaried, with long enough seniority	760	Workers and employers	4.7	9.5	28.6	33.3	23.8
Unemployment insurance in Brazil	Salaried and in social security	664	Workers and employers	10.6	24.6	19.1	25.1	13.6
Individual accounts in Colombia[a]	Salaried and in social security	—	Workers	0.0	4.3	n.a.	19.1	76.6

—, Not available.

n.a., Not applicable.

[a]Beneficiary data for Colombia refer to quartiles, not quintiles.

Source: Constructed by author using data from World Bank (2000).

accumulated. Reassuringly, this story line is much more nuanced than the ideological views often voiced in the policy debate. But it could nonetheless be wrong. Although all research papers conclude with the assertion that more research is needed, such a conclusion really appears to be warranted in this case. In ending, it may be useful to summarize the tentative story line emerging from this analytical survey.

Does globalization affect labor market outcomes? The answer is yes, but in uneven ways. In the short run, exposure to world markets is associated with lower wages, but foreign direct investment is associated with higher wages. Though the dispersion of wages by occupation does not seem to change much, returns to education increase with openness to trade—and they increase dramatically with foreign direct investment. In the medium run the effect of trade liberalization on wages switches from negative to positive. The effect should become even more positive in the long run, as the positive impact of openness on output per capita should lead to a sustained increase in all wages. But globalization can be a source of hardship for old, less skilled workers in protected sectors. These workers are likely to see their wages decline. The decline in their well-being could be larger than that indicated by the estimated decline in wages because trade liberalization may also be associated with higher unemployment.

Can labor market policies mitigate or offset the effects of globalization? The answer is a qualified yes. The most effective interventions are not those that increase the bargaining power of labor relative to capital, but those falling under the social protection heading. In particular, the core labor standards at the center of the policy debate today appear to be quite ineffective. Minimum wages also appear to make no significant difference. Conversely, the amount of resources channeled through the social security system (which is highly correlated with the number of ILO conventions ratified) is associated with lower overall inequality and appears to benefit even the poorest segments of the population, even if they are unlikely to be formally covered by the system.

Finally, do labor market policies reduce efficiency? The answer depends on the time horizon considered. In the long run, labor market interventions may have little impact on economic performance. If anything, minimum wages could be associated with higher growth rates, as long as they are set at moderate levels. Minimum wages and other interventions falling under the social protection heading appear to be benign in the short run because they do not interfere with the effectiveness of economic reforms. But this effectiveness is substantially reduced when special interests are powerful. High rates of union membership and especially large public sector employment are associated with poorer performance before economic reforms are adopted and a slower recovery afterward. In developing and transition economies there is a high correlation between unionization and public sector employment, and the observed regularity could simply reflect the ability of unionized workers and public sector employees to successfully oppose economic reforms.

In sum, social protection mechanisms could be an important complement for policies aimed at further integrating developing economies with the rest of the world.

These mechanisms can mitigate the increase in inequality that could result from an increased premium for skill. They can also be used to compensate those who stand to lose from globalization, defusing the opposition to reform. Social protection mechanisms can take the form of one-time interventions or permanent programs. The most appropriate mechanisms in each setting depend on the resources available and the target group. In countries where resistance to globalization is potentially strong, the compensation could be targeted to the most vocal groups, even if they are not poor. In other cases the focus could (and should) be on the poorest groups. In practice, the optimal policy would probably combine several mechanisms, such as public works and unemployment insurance, or public works and severance pay for redundant workers.

All this said, among all the government policies that could mitigate the effects of globalization on labor market outcomes, the most promising candidate may be outside the labor market. Although the impact of trade liberalization on wages can be expected to switch from negative to positive over the medium run, and presumably to highly positive in the longer run, the increase in the skill premium may not fade away so easily. The dispersion in the educational attainment of the population may thus translate into a larger dispersion in labor earnings. Reducing the dispersion in education could be the most effective way to reduce the dispersion in earnings. So although this article has dealt mainly with labor market policies, it is important to keep in mind that they may be less effective than education policies in mitigating the adverse effects of globalization.

Notes

1. Studies include Green and others (2001) on Brazil, Beyer and others (1999) on Chile, Robbins (1997) on Colombia, Robbins and Gindling (1999) on Costa Rica, Hanson and Harrison (1999) on Mexico, and Behrman and others (2000) on Latin America as a whole.

2. This analysis is based on work in progress by Freeman and others (2001).

3. This analysis is based on work in progress by Rama and Ravallion (2001).

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