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LABOR MARKET REFORMS: ISSUES, EVIDENCE AND PROSPECTS

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Abstract

The study of labor market segmentation and the estimation of the deadweight loss due to policy distortions reflected in wage structures require analyses of labor force surveys. These data are increasingly available in most countries. But evaluations of labor market reforms are uncommon. The lack of documented labor market reforms may reflect the difficulty of reducing wage distortions by direct policy measures, and the greater capacity of trade reforms and changes in industrial structure to erode wage distortions indirectly, and thereby promote efficiency and economic growth. The economic case for labor market reforms should nonetheless strengthen support for allied policies.

1. INTRODUCTION

The general objectives of labor market reforms are notably conflicting in terms of short-run and long-run efficiency and equity. Few policy reforms are focused only on the labor market, while many deal with foreign exchange and trade systems, domestic tax-subsidy regimes, and restructuring industrial organizations, markets, and property rights. One might conclude that economic problems in labor markets are not today salient or central to progress. Alternatively, the magnitude of the problems in trade, taxation, and industrial organization may directly increase the leeway for misallocation of workers and human capital investments in the economy that seriously retard development.

These conditions that contribute to the severity of labor market distortions may, therefore, have to be resolved first to expect labor market reforms to succeed. Perhaps the political economy also sets constraints on directly reforming labor markets which preclude legislating the appropriate changes in labor codes or worker benefits that are transparently to the disadvantage of powerful and concentrated interest groups. If this impression is valid, it may explain why the historical and even analytical literature on labor market reforms is so sparse. This explanation may also prepare the reader for not expecting here a synthesis of a well developed literature but only an impressionistic menu of issues, some indications of relevant empirical patterns, and prospects.

Labor markets can be inefficient in allocating labor for many reasons, but I could find few salient empirical studies that estimate the magnitude of the deadweight loss caused by one or another market failure, distortion, segmentation, or regulatory intervention. Applying current micro econometric standards of public finance, the conventional estimates of wage distortions are potentially subject to a variety of biases that may be difficult to correct. Moreover, these Harberger

wage "triangles," or approximations of how much wages of observationally equivalent workers differ in different "segments" of the labor market, are but the first step toward evaluating the lost social output caused by these market failures, or the gains that could be recovered by suitable policy reforms.

My paper reviews in section 2 a number of economic issues that are intertwined in labor market institutions and regulations, and considers the benefits and costs that are hypothetically tied to reforms. Programs and policies that are commonly linked to labor market distortions and segmentation are considered in Section 3, which ends with an overview of the studies I have seen on the changing wage structures in the transition economies. It would be myopic to attribute these changes in the value of different types of labor in this period of transition from centrally planned to market oriented economies as due to the removal of some specific labor market "distortion." Rather these changes in the relative values of labor between systems reflect more fundamental tasks of establishing property rights and markets for capital, finding mechanisms to simulate competitive markets, and creating incentives to adopt and develop efficient modern technologies.

2. OBJECTIVES IN THE LABOR MARKET AND REFORMS

Evaluating the performance of the labor market can be approached first in terms of static efficiency of utilizing fully the productive contribution of the adult population, and second in terms of dynamic efficiency of investing optimally in the human capital of workers and redeploying them over time to jobs where their present discounted productivity is maximized. A third objective is fairness in wage differences and ultimately the inequality in consumption opportunities after taxes and transfers. Combining these three objectives to arrive at a single criterion of macroeconomic performance of the labor market is not straightforward. There is little agreement on even the rough empirical

magnitudes of the losses associated with the least complicated static forms of distortions or segmentation of the labor market that have attracted the most attention.

2.1 Static Efficiency

Minimizing unemployment and achieving a high rate of utilization of the adult population in economically productive activity is one definition of an efficient labor market. In order for the labor market to clear efficiently, wages adjust sufficiently to achieve full (e.g. noninflationary) employment, workers respond to changes in wages across jobs in different firms, sectors, and regions, and workers optimally search for and accept improved alternative employment opportunities as they arise.

But labor contracts typically have a duration and specify many contingencies, more explicitly in the formally contracted or covered sector than in the informal or uncovered sector, where only customary practices discipline the employment relationship. Governments often legislate highly complex regulations on acceptable forms of the labor contract so as to achieve their goals, among which is sometimes a stated objective, as in Latin America, of strengthening labor to deal on "equal terms" with the concentrated power of large capitalistic firms, or in other situations governments seek to weaken union power to achieve another balance. Restrictions may be specified on firing and hiring, on unemployment and social insurance (e.g. job related accidents, medical care, retirement) financed typically by payroll taxes on the worker and firm, on occupational safety standards and mandated fringe benefits (e.g. holidays, vacations, sick pay, maternity leave), and finally on minimum wages.

Governments typically establish intricate rules under which workers can (freely?) organize themselves to participate in the collective bargaining process that determines their wage and

employment conditions, and thereby may affect the relative strength of the two sides, as noted above. These contracts are then negotiated by labor, management, and perhaps government representatives, balancing objectives at the level of the plant or firm, or at the level of an industry, or at the level of a national confederation of workers and employers.

Disagreements in the practice of labor relations may then be adjudicated by conventional courts or resolved by special government tribunals that introduce additional uncertainties and lags in outcomes and provide further room for politics to modify economic outcomes in the labor market (mainly for the covered sector). Public sector employees are often provided with distinct institutions to resolve their wage and employment conditions, with further appeal processes that protect civil service workers from arbitrary (or any) disciplinary incentives, as protection from politicians filling public jobs as patronage. In section 3 of this paper some of these public regulations of the labor market are examined to assess their social costs and potential for policy reform. These institutional and legislative variations in the labor market can be exceedingly complex and legally convoluted, making it hard to construct empirical measures that can be qualitatively compared across countries to proxy "flexibility", "distortion", "segmentation", "regulatory burden", "equity" or "efficiency." More specific institutional comparisons can help in this regard, but do not eliminate the frustratingly unquantifiable dimensions of the conflicting objectives and achievements of labor markets (Pencavel, 1991, 1996).

Much of the current debate on labor market reforms in low-income countries is shaped by the contrasting achievements of the high-income OECD countries after 1973 as their total factor productivity growth slowed. In the subsequent 25 years real wages in the United States have stagnated, but employment has grown briskly, and the unemployment rate has fallen from 9 to less than 5 percent. In Western Europe unemployment (and early retirement) has increased and real

wages have continued to advance modestly, with the exception of the United Kingdom which reformed its labor market under the Thatcher administrations and has followed the U.S. approach. The Delors Report for the European Union reached the conclusion that in continental Western Europe excessive job security, generous unemployment benefits, high minimum wages, liberal eligibility rules for and generous levels of welfare benefits, and finally restrictions on part-time work were major causes for the persistently high, long-duration unemployment found recently in Europe. Some labor economists in the United States subscribe to this view that inflexibility of the labor market in Europe and the generosity of the European safety-net of welfare programs were the cause for the differential growth in employment and resulting unemployment between Western Europe and the United States after 1980 (e.g. Haveman, 1996). But this European arrangement of the labor market and welfare programs also claims some offsetting gains: wage and consumption inequality are lower in Europe (Blank, 1994), and firms and workers have longer tenure matches which could provide stronger incentives to invest in firm-specific training that may be responsible for labor productivity gains and aggregate growth.

What remains clear, however, is that unemployment is higher in continental Europe, and other indicators of underutilization of labor are evident including more rapid declines in participation rates for men in Europe than in the United States, and legal segmentation of the labor force into part-time and full-time workers, which can widen compensation and training gaps between these segments of the labor force (OECD, 1997).

Japan illustrates how institutionalizing the temporary work category creates a potentially inefficient segmentation of the labor force. Female workers are a large and rapidly growing share of the Japanese labor force, but they are predominantly categorized as "untenured" or temporary workers. When employment is cut in Japan, women are more likely than men to be fired from the

larger firms that hired permanent (predominantly male) workers with the expectation of lifetime employment. The special contractual status of the "untenured" workers also provides firms with less incentive to train them, and accounts for why they are less costly to fire and rehire when economic conditions of the firm improve. This feature of the Japanese labor code provides the labor market with more flexibility or a buffer stock of temporary workers. But to achieve flexibility in this manner, the code introduces a form of segmentation. The dualism in the Japanese labor market erodes the motivation of women workers or their employers to invest in their training. These labor market institutions undoubtedly are part of the reason that Japanese women have very flat earnings-age profiles over their life cycle compared with the profiles in other high-income, well-educated countries, and the wages of women relative to men are the lowest in OECD comparisons (Schultz, 1997).

In low-income countries, the static inefficiency of the labor market is not as clearly reflected in the unemployment rate as it is in the OECD countries. This is partly because most low-income countries do not have the welfare programs of the high-income countries that support from public revenues the unemployed, poor, disabled, and sick. Measurement of unemployment is also more uncertain outside of the formal sector, and often half or more of the labor force works in what is called the informal or uncovered (by government regulations) sector, defined generally to include the self employed, those who work in an unpaid capacity in their family, or in an uncovered wage sector of the economy. Not only is there often no unemployment insurance for those working in the informal sector, there is more ambiguity in defining unemployment when hours are flexible and work in the market and home become mixed.

The major source of inefficiency in low-income country labor markets is therefore summarized by the dualism between the formal and informal sectors of the labor force. The general

welfare consequences of such dualism in the labor force is graphically described by Johnson and Mieszkowski (1970) in the case of labor unions, and generalized to minimum wages by Mincer (1976), and other forms of segmentation by Cain (1986). Segmentation is a source of inefficiency because the formal or covered sector limits wages, imposes taxes on labor, or restricts the flexibility of the labor contract in other ways, while it is typically assumed that the informal or uncovered sector efficiently allocates its labor and other resources.

In many Latin American countries the combination of payroll taxes and labor contract regulations on firing creates a wide wedge between the wage received by the worker and the cost of labor to the formal sector employer. For example, in 1992 the average Brazilian worker in the formal sector received a take-home wage that was about 53 percent of the wage and payroll taxes paid by the worker and employer (Marquez, 1995). Estimates vary, but suggest that workers value the additional medical care and social insurances at perhaps 20-30 percent of their tax value. This suggests that comparable workers cost an employer in the formal sector 30-40 percent more than they cost an employer in the informal sector.[2]

Such segmented parts of the labor force imply an inefficiency in allocating labor that depends not only on the intersector wage gap for comparably productive workers, but also on the elasticity of demand and supply of labor in the two sectors (Mincer, 1976). This form of labor market segmentation is also likely to displace workers from the labor force entirely, as the wage is depressed in the informal competitive sector, and some individuals then allocate all of their productive time to home production. To quantify the deadweight loss from such a distortion in the labor market one therefore also wants to know the productive possibilities in home production or how much labor productivity declines in the home production sector as it absorbs more of the population's labor supply.

The figures provided above on payroll taxes for Brazil would also be of a similar magnitude for many other countries in Latin America, such as Colombia, Peru, Bolivia, Ecuador, and perhaps Mexico and much of Central America, where the informal sector employs half or more of the labor force (Marquez, 1995). When the formal sector firm has no legal way to discharge workers, even in bankruptcy, as in India (Srinivasan's paper at this conference), another form of labor market segmentation arises that raises substantially the expected cost of labor for the formal compared with the informal sector, but these issues may be better formulated in an intertemporal context.

2.2 Dynamic Efficiency

Flexibility is most concretely defined as the ability to hire and fire without excessive costs, and the mobility of workers to change jobs, sectors, and regions of employment without legal or social restrictions. As noted later in the section 3, some schemes of job severance pay or firing penalties provide incentives to employers to dismiss workers before they can accumulate sufficient tenure, or to be reclassified from temporary to permanent worker. These provisions of the labor code would seem intended to provide the worker with job security and thereby to encourage more efficient levels of investment in firm-specific-training. But the response of employers may be to hire more workers on short-term contracts, and thereby avoid the severance penalties and legal challenges to termination long-term employees (Marquez, 1995). As changes are introduced in these provisions of the labor code in a specific country, it is possible with annual labor force surveys to estimate the consequences of these reforms on job turnover, the growth of wages with respect to tenure on the job, wage levels, and employment growth by tenure category. But in reality the policy evaluation task is empirically daunting, and labor code reform evaluations are rarely undertaken even though the required labor force surveys are available from a growing number of countries (Schaffner, 1997).

In addition to public policies that encourage or discourage job turnover, which seems to be substantially higher in some low-income than in high-income countries (Schaffner, 1997; Kim and Topel, 1995), there are cultural and institutional variations in labor market arrangements. The hypothesis was advanced in the 1980s that part of the reason for Japan's strikingly rapid growth in labor productivity, steep wage-age profiles, and heavy investment in worker training was that it was traditional in Japan to hire workers into the larger firms directly out of school, and retain them for their entire lifetime. This implicit lifetime employment contract could, it was hypothesized, explain the other productivity related aspects of the Japanese economy noted earlier, including the need for a mandatory early retirement provision (Hashimoto and Raisian, 1985; Mincer and Higuchi, 1988).[3] Clearly, the slowdown in the Japanese economy in the 1990s has provided another perspective on some of the costs of the rigidities that this system entails.

Evolving pressures on the Japanese economy for shifting workers from lower to higher productivity sectors may have been more difficult to accomplish within the traditional consensus-oriented institutions of the Japanese labor market, because they require redistribution of personal incomes. This reallocation problem in Japan may be compared with the efficient reduction in real wages for all workers that was implemented to accommodate the oil shocks of the 1970s. Although worker-employer bargaining occurs on a decentralized basis, wages in those sectors of the Japanese economy that have failed to increase their labor productivity at the pace achieved elsewhere in the world have continued to grow with national wages. The redeployment of labor out of the stagnant and low productivity sectors of agriculture, retail sales, distribution, etc. has not occurred smoothly. Just as insolvent financial institutions have not been allowed to fail, workers in industries that have failed to increase their productivity are given insufficient wage incentives to change their sector of employment.

The existence of a large informal sector in which wages are determined competitively and turnover is not regulated provides a buffer to absorb the unemployment. Fluctuations in the Brazilian economy from 1970 to 1990 did not greatly affect the quantity of jobs, but it did shift them between the formal (inflexible) and informal (competitive) sector, without causing unemployment rates to change systematically (Amadeo et al. 1994). This apparent flexibility of the overall Brazilian labor market is of course purchased at the cost of dualism, which has the inefficient features of a segmented labor market where wages for the same type of labor differ in the covered (formal, regulated, unionized) segment and uncovered (informal, unregulated, nonunionized) segment of the labor market (Johnson and Mieszkowski, 1970). Should the low unemployment achieved by Brazil in the 1970s and 1980s be viewed as an indicator of satisfactory flexibility in the labor market, or does the adjustment to external shocks by only the informal labor market suggest this is an inefficient arrangement putting the entire burden of structural adjustment on workers in the informal sector?

This raises a second concept of flexibility: do wage differences across sectors, regions, and skill levels adjust readily to facilitate the redeployment of labor in an efficient manner following a change in the relative prices of inputs and outputs or technology? In the Brazilian case, foreign exchange deficits in the 1980s led the government to restrict imports, which however failed to achieve a reallocation of labor from import competing to export industries (Marquez, 1995). Employment grew in services and trade that are predominantly informal sectors, along with government services. Manufacturing employment associated with Brazil's export industries tended to grow only at the rate achieved by the overall economy in this period.

Government regulations that encourage the growth of the informal sector also tend to make it difficult for the smaller scale informal firms to export their output, however productive they may be or tradeable their product. Another consequence of putting the burden of structural adjustment

on the informal sector is that the recessions tend to cause greater variation in wages and unemployment among less skilled workers, whose employment is concentrated in the informal sector. Female and younger inexperienced workers may also be displaced from formal sector jobs if the formal sector contracts, as minimum wage floors increase in real terms and payroll taxes rise discouraging employment of less productive demographic groups. But there are few studies that make a compelling case for how large the resource gains would be if this form of formal/informal dualism were eliminated or payroll taxes reduced and these revenues were obtained from a tax with a wider base, such as a value-added tax.

Few studies posit a framework within which to evaluate the flexibility of the labor market to redeploy workers efficiently across a national economy as it experiences structural change. Kim and Topel (1995) offer a methodology for gauging how efficient or integrated a labor market is and apply it to the study of Korea from 1970 to 1990. First, they show that employment has grown across industry in parallel with growth in labor productivity by industry, as one would expect if the demand for outputs of those industries were elastic because of their access to international markets. They regress employment and labor productivity measured by output per worker by manufacturing industries and over time on dummies for year and industry. The employment and productivity residuals from these regressions are strongly positively correlated, leading them to conclude that the growth in industry-specific employment is being driven by growth in that industry's labor productivity, though they might also have included controls for international price (productivity) trends by industry that might capture industry-specific technological changes that would be relevant to export-oriented firms.

Second, they demonstrate that the growth in real wages across industries in this two decade period is not correlated significantly with growth in employment for that industry and year, using the

same regression residual method. They conclude from this lack of pattern between employment growth and wage growth that the Korean labor market is unified across these manufacturing sectors. Average labor productivity tripled in Korea in this 15 year period, but differed markedly by industry. Korea appears to have redeployed workers fast enough to keep wages growing at about the same rate across the economy. Interindustry mobility of workers was high, but the entry of new workers into the entire manufacturing sector occurred mostly by hiring urban-schooled youth, while the out-migration of workers from agriculture found employment in urban services. High turnover within manufacturing may have contributed to the absence of growing gaps between the wage levels in rapidly growing and in stagnating manufacturing industries. A major limitation of their Korean analysis is that it is restricted to male workers in urban manufacturing employment and is thus unable to capture the informal sector or clarify the inefficient dualism that lies outside of manufacturing for males. Their approach provides a quantitative methodology for evaluating the flexibility and integration of the labor market within at least this dominant and growing segment of the Korean labor force, and could be applied to the entire labor force in other countries where nationally representative surveys are available.

2.3 Inequality

The ratio of wages between more and less educated workers has increased in a growing number of countries after about 1980, though the magnitude and timing of this trend appears to have been affected by a variety of domestic policies, some of which may be classified as long-term human capital investment strategies rather than labor market or welfare policies. The standard analysis of changes in U.S. wage differentials during the 1960s and 1970s assigned substantial explanatory weight to the changing relative size of the baby boom cohort entering the labor force in the 1970s

and the changing relative proportion of recent cohorts with different amounts of education (e.g. Welch, 1979). But starting in about 1980, the ratio of wages of college graduates to high school graduates began to increase, nearly doubling in a decade (Katz and Murphy, 1992; Murphy and Welch, 1992). The associated growth in wage inequality was less readily explained by changes in the size of birth cohorts or the relative size of educational strata. Nor did the change in industrial composition of employment or the opening of the U.S. economy to international trade appear to account for these changes in wage structure (Topel, 1997). One was left with the "residual hypothesis" that technical change had developed a skill bias, creating greater derived demand for more educated labor that was responsible for the added wage inequality in the U.S., U.K. and Australia. These trends were less extreme in Canada where educational inequalities grew less pronounced, and were more muted in many European countries and in Japan (Davis, 1992; Gottschalk and Smeeding, 1997; Schultz, 1998b).

These trends in inequality might be more dramatic if those who are unemployed (or no longer participating in the labor force) could somehow be included at the bottom of the wage distribution. There have been substantial declines in participation rates of males belonging to the lowest education and wage groups in the United States from 1967 to 1987 (Juhn, 1992), and the pattern of declining participation among those groups experiencing wage declines has continued (Welch, 1997). The generosity of welfare programs and of unemployment insurance in excess of competitive wages have contributed to this disemployment effect of the least productive or the least motivated to work. It appears likely that offsetting the gains in continental Europe of more equal consumption opportunities achieved by the safety net of welfare programs is the lost productive contribution of those retiring prematurely from market employment. As taxes on market earnings increase to support the expanding services of the welfare state system, more workers are dissuaded from

working by the declines in their after-tax wage (Rosen, 1996). There are clearly differences in objectives between the United States and much of North Western Europe in terms of these contrasting labor market and welfare policies.

Aside from the United Kingdom, measures to reduce the inflexibility of the labor market have not been broadly pursued in Europe, and thus labor market reforms cannot be evaluated to determine how they might impact employment, unemployment, labor productivity, wage and income inequality. As in the United States, when the duration of unemployment benefits has been changed, these policy changes have had the expected effect on the probability that a worker with a specific duration of unemployment will find employment (Meyer, 1989; Anderson and Meyer, 1993). When Germany or Austria changed its age limits for early retirement or the duration of unemployment benefits for the elderly, transitions to retirement and hazards of re-employment in the treatment group responded in much the same way as they did in U.S. studies (Hunt, 1995a; Winter-Ebner, 1996). When Spain created a special category of short-term employment for which employers would not be penalized if the new workers were subsequently laid off, aggregate employment began to rise and unemployment to fall in the 1990s. But these modifications in minor features in labor legislation are not comprehensive enough to impact clearly aggregate trends in unemployment or employment growth. For example, changes in eligibility rules for unemployment benefits are still subject to the interpretation of local labor-management committees in Germany, and may not follow the letter of the law in reducing the generosity of federal labor legislation. Thus, there is little evidence that tentative and small efforts to make European labor markets more flexible have yet made much of a difference.

It is useful to compare these wage changes with the evolution of wage structures in low and middle income market economies, and later the patterns in the transition economies. A growing

number of these developing countries have collected comparable cross sectional labor market surveys for several decades. It is common to find the wage returns to schooling first increase, at the onset of sustained rapid economic growth, and then decrease, as the relative supply of educated workers increase sharply and apparently catch up to the rate of growth of demand for these more skilled workers.

Studies suggest this pattern occurred in Taiwan, Korea, Brazil and Colombia, for example. In Taiwan wage returns to schooling are reported to have increased from 1964 to 1975, and then from 1976 to 1995, the average wage returns to an additional year of schooling gradually fell from 9 to 7 percent for full-time wage earners (Schultz, 1998a; Grindling et al. 1995). In Korea the returns to secondary and higher education increase until 1976, and slowly decline until 1987, when the returns to college education begin to diminish more rapidly. The decline in the log variance in wages by one-third during the 1980s is attributed to this narrowing of wage inequality related to schooling (Kim and Topel, 1995; Choi, 1993). Brazil, despite its unusually high level of income inequality, experienced an increase in rates of return to secondary and higher education in the 1960s, followed by a sustained decline in the 1980s. The decline in returns to education in Brazil is steeper in states where the supplies of educated workers are relatively larger, and the growth in wages and development has been more rapid, such as in Sao Paulo and Rio de Janeiro (Reis et al. 1991). Colombia also experienced a widening of ratios between the earnings of education groups before the mid 1960s, whereas these wage ratios have declined as has wage inequality after the 1970s, when the supply of better educated workers increased more rapidly (Londono, 1995). Cross country and time series differences in income inequality derived from World Bank data sources assembled by Deininger and Squire (1996) suggest that income inequality has tended to decline slowly, on average, with economic development since the mid-1960s, particularly in those low and middle income

countries that have expanded their educational systems more rapidly. Only in the high income group of countries (i.e. OECD) is there a clear tendency after 1980 for income inequality to increase, and to this group should probably now be added the transition economies that are discussed later in section 3.8 (Schultz, 1998b). In some middle income countries there is also evidence that education wage differentials have recently risen with trade liberalization (Robbins, 1997; Harrison and Hanson, 1999)

The tendency for wage ratios by schooling groups to increase, at least initially, serves the purpose of motivating individuals and families to sacrifice current output and consumption to increase the schooling of youth. These rising private wage returns to schooling also signal the public sector to coordinate the expansion of the appropriate levels of training for which the labor market is willing to pay an increasing proportional premium. Wage differentials between regions may also serve a similar purpose by fostering economically productive levels of migration, if the political system can accommodate the strains of adjustment on urban (or possibly also rural) infrastructure, e.g. housing, schooling, health and sanitation. Changes in age-earnings profiles are a more complicated development, and may be due to a combination of pressures: the obsolescence of skills acquired under an earlier but now reformed regime, the technological obsolescence of past schooling in a technologically dynamic economy, and the slowing of population growth of younger cohorts due to the demographic transition.

The primary policy implication of these development-induced changes in wage structures is that those countries that have expanded their educational system in advance of the requirements of their economy have tended to perform well and eventually achieved a reduction in wage inequality. The question remains whether the education, mobility, and training policies that these countries adopted were directed at labor market reform or human capital social investments. Although

increasing the supply of educated labor to the economy can reduce substantially inequality while enhancing the prospects for growth, it is more speculative whether generous welfare programs a la the European model narrow inequality without sacrificing labor market efficiency.

3. PUBLIC POLICIES AND PROGRAMS AFFECTING THE LABOR MARKET

Segmentation, dualism, or discrimination can arise from a variety of distortions in the labor market, and the inefficiency it imposes on the economy depends on the magnitude of the distortion, or the difference in wages or labor costs in different sectors for workers of the same productivity, how the distortion is caused and corrected, and the elasticity of the supply of and demand for labor in the various segments of the labor market (Cain, 1986; Schultz, 1993). The most discussed form of dualism is between the contractual labor sector that is subject to government regulations and the remaining unregulated sector, as typically illustrated by Latin America (de Soto, 1989). This difference in the cost of labor in the two sectors arises because of a host of government measures, not typically due to a single intervention. The combination of payroll taxes is the most visible, but it is augmented by more difficult to quantify restrictions on the conditions of employment, penalties and justification for firing, minimum wage and mandated fringe benefits, institutional protection for public sector employees, industrial interest groups, unions, etc.

3.1 Firing Costs and Worker Turnover

A troubling aspect of labor market flexibility is its downside for discouraging investment in worker skills that cannot be transferred to another job. Becker (1964) emphasized that to the extent that on-the-job training (OJT) enhanced the productivity of the worker only on their current job, this form of firm-specific training might be undervalued by worker and employer and hence subject to under investment. Without a binding long-term employment contract, the employer (through

terminating the worker) or worker (through quitting and job turnover) can reduce the expected return on OJT to the other party. As noted earlier, the U.S. and Japanese labor markets from 1960 to 1980 have been contrasted in terms of how the lifetime employment relationships honored by larger Japanese firms provided stronger incentives to invest in OJT and might explain the faster Japanese labor productivity growth. But I do not know of empirical evidence on the magnitude of the under-investment in firm-specific-training that is associated with a more “flexible” labor market or an estimate of the social costs that should be borne to reduce inefficient turnover. One justification for penalizing employers for firing workers is that these measures encourage firm-specific training, and yet this approach can backfire, at least according to Latin American evidence. (Schaffner, 1997).

For example, in Brazil, the accumulated value of a worker's personal insurance account (FGTS) is paid to the worker when he/she leaves the job. This scheme encourages the employer to layoff younger workers to reduce his payments out of the firms FGTS, and may encourage workers who are credit constrained to change jobs to draw down their accumulated balances (Amedeo et al, 1994). This form of "unemployment insurance" is credited with contributing to Brazil's high turnover rates in the formal sector and for discouraging OJT training. Because the payment is a lump sum, it does not require the worker to be unemployed or search for a job. Indeed taking a job in the informal sector while drawing down FGTS benefits is like collecting a pension or vacation paycheck. A similar feature of the labor code in Colombia was modified to reduce its incentives to layoff workers with shorter tenure, and an increase in job durations was observed (Schaffner, 1997). The combination of very high payroll taxes on labor and heavy severance payments for employers in the formal sector of Latin America contribute to the formal/informal labor market dualism that characterizes this continent (deSoto, 1989).

3.2 Unemployment Insurance, Public Work, and Training Programs

Other social programs and policies can help to redistribute across persons the unequal burden of unemployment. Unemployment insurance (UI) is the most direct mechanism by which the public sector provides eligible workers with a benefit replacing some fraction of the lost wages, for a specified duration of unemployment. A large and sophisticated literature deals with designing UI schemes to minimize bad incentive effects: reduce adverse selection bias (workers becoming unemployed who want to work less, or firms laying off workers who are only temporarily redundant) and to reduce moral hazard (not searching for a new job until UI is exhausted, unless the wage offer is sufficiently above the UI benefit) (Meyer, 1989). The United States was the first, to my knowledge, to opt (from 1937) for varying the UI tax on employers in response to their past layoff experience, to diminish the incentive for firms to use cyclical layoffs (unemployment) as a cost saving device when confronted with cyclical demand for their output. Nonetheless, the United States is singled out as the high-income country with the greatest volatility in unemployment over the business cycle, suggesting that U.S. employers are less able to adjust wages over the business cycle or prefer for other reasons to adjust employment rather than wages.

Public work programs such as were introduced in Chile in their recession after 1975 (PEM and POJH) recategorized the unemployed and assigned some of these persons to relief jobs in the public sector. Netherlands reduced its unemployment by introducing welfare legislation that assigned many of the unemployed to disability programs and then sought to cut back these expanded programs. Various European countries liberalized their retirement pensions available for older unemployed workers, and they were thus able to reduce the rate of long-term unemployment. Clearly, the magnitude of unemployment is affected by the scale of the (after tax) UI replacement rate, the duration of coverage, eligibility, and the variety of other disability and welfare programs that

may offer competitive benefits. When unemployment benefits are based on the monetary value of prior wages, periods of rapid inflation as in Russia can reduce benefits to the point where there is no incentive to even register as unemployed (Foley, 1997).

Unemployment insurance (UI) schemes make unemployment more attractive to the individual, and thereby increase its freqency, other things equal. Adjusting the unemployment insurance premia for the firm according to the unemployment experience of the firm's past employees (i.e. experience rating) is one means to encourage firms to reduce their cyclical variation in employment, and thereby reduce unemployment. But experience-rating of UI taxes by firm has not been a widely adopted feature of the United States legislation introduced first in 1937. Other forms of social welfare legislation, as they have evolved in most high-income countries, change further the costs and benefits of unemployment of different durations, with likely consequences on unemployment and labor force participation levels. In addition, the very concept of unemployment as a calibrating measure of labor market flexibility or efficiency of labor utilization is more problematic in a low- or middle-income country. When as in Brazil, Peru, Ecuador, Bolivia or Colombia informal sector activities still occupy as much as half of the labor force, the comparability of unemployment rates across countries is complicated.[4]

Can the public sector help workers find new jobs after they become displaced from another, or raise the productivity of unemployed to foster their re-employment after they have lost wage benefits associated with firm-specific training capital? Public programs to accomplish these goals are rationalized on at least three different grounds: strictly in terms of an efficient human capital investment that raises the worker's lifetime productivity; as a subsidy to encourage firm-specific on-the-job training which may otherwise be subject to under-investment; and as an equitable compensation for the unfair incidence of personal burdens related to the structural adjustment

process. In the United States, sophisticated efforts to evaluate the internal rates of return from job-retraining programs do not find robust evidence that these undertakings have yielded competitive payoffs, and certainly not of the same magnitude as for regular schooling, and perhaps not even equal to the more modest returns associated with vocational education (Heckman et al., 1998). Training programs in Latin America, in addition, tend to be oriented toward workers already employed in the formal sector. They can thus be most readily justified on the basis of the second argument listed above, and even on that basis they do not get high marks for efficiency (Paredes and Riveros, 1994).

Chile provides an exceptional case study of how these large public training programs can be reformed. In 1976 Chile terminated its inflexible and costly INACAP public training program that provided vocational training for relatively well educated youth who were generally already employed in the formal sector. These programs in Chile were similar to those in Brazil (SENAI) and Colombia (SENA), whereas in Mexico CIMO concentrated on small enterprises. In its place Chile created a National Training and Employment Service (SENCE) that removed the state from implementing the programs. Instead the agency auctioned training contracts off to groups in the private sector, who were then responsible for instituting cost-recovery tuition fees and monitoring how successful those enrolled in their programs were in qualifying for better-paying jobs after their training (Paredes and Riveros, 1994). Private firms in Chile were also given tax incentives to encourage more training of low-wage workers, entitling them to deduct from taxable profits these training costs up to a per worker ceiling. Although these programs continue to be designed to serve the needs of employed workers and firms, rather than facilitate retraining of the unemployed who lost their jobs due to structural adjustment, the reforms in Chile are reportedly flexible in responding to the current needs of the economy and in expanding resources invested in the training of the least skilled workers.

3.3 Mandated Fringe Benefits and Minimum Wages

Studies of mandated fringe benefits for specific groups of workers in the United States and Canada suggest that most of such benefits are "passed through" to workers in the form of reduced take-home pay. For example, Gruber (1994) finds in the United States that as states legislate maternity benefits for workers, according to Congressional guidelines, the wage rates of younger women (i.e. of childbearing age) decrease relative to those in previous years in the same state, relative to neighboring states in the same year without such benefits, and relative to men and older women in the same state and year. Employment effects are insignificant, perhaps because the costs of the benefits are largely deducted from the wages of the beneficiaries. Across OECD countries, Ruhm (1998) reports that short (three month) parental leave has no effect on women's wages, but longer leave is associated with lower female wages and increased female employment. In other less flexible markets that are unable to reduce wages to the beneficiary group, one might expect there would be a decline in employment from the employer's side, even as there could be a greater supply of labor offered to fill the remaining jobs that are now more highly compensated. This literature suggests that mandated benefits for women, and specifically maternity leave, may reduce employment opportunities for young women in a highly regulated labor market. Regardless, these benefits are not likely to achieve their stated objective of uniformly improving women's welfare. In a more regulated labor market, as one finds in many low-income countries in the formal sector, this same policy intervention to provide women with maternity benefits would probably reduce the fraction of women of childbearing ages employed.

In one of the oldest cases of labor market regulations, minimum wages have been viewed as helping one group of workers to remain employed and benefit from their wage being pulled up to the minimum wage, and hurting another group whose productivity does not warrant a job at the

minimum wage and who thus are displaced from a low wage job into unemployment or out of the covered labor force. The ratio of minimum wages to national GNP per capita tends to be lower in high-income countries than in low income countries[5]. Thus, the marginal worker who is helped or hurt by the minimum wage tends to be among the relatively poor in industrially advanced, high-income countries, but is often in the urban middle class in low-income countries. With unemployment insurance and other welfare programs available to support those who lose their job in high-income countries, the magnitude of minimum wage gains and losses are debated conditional on the existence of this safety net for those who lose their job. There is currently no agreement among economists on the welfare balance of these program effects even in high-income countries (Card and Krueger, 1995; Deere et al., 1996).

In low-income countries those who benefit from a minimum wage tend to be among the relatively high income groups, and the burden of downward adjustment in wages and employment is imposed on the many relatively poorer workers who generally lack public welfare systems and can rely only on private family transfers (Schultz and Mwabu, 1998). In a middle-income country, Chile, the minimum wage remains controversial. In June 1989 an exception was granted for youth age 14 to 18, for whom the minimum wage was reduced by 16%, with the expectation that it would increase employment among this group who sustain high unemployment rates (Bravo and Contreras, 1998). Comparisons of employment between 1989 and 1990 and between the age groups 14-18 and 19-23 were not able to identify a significant employment effect for the difference between the two age groups. Thus, even when suitable data and well-designed policy reforms are observed, the magnitude of the regulatory effects in the labor market may still be difficult to measure, possibly obscured by noncompliance or non-enforcement. The non-parametric (kernel) distribution of wages in the two age groups in Chile indicate a surprisingly large fraction of workers report their wages are

below the legal minimum, although this could be attributed to errors in measurement. (Bravo and Contreras, 1998, Figure 1). Enforcement of minimum wages adds an uncertainty to the evaluation of their impact for which no solution has been proposed (Schultz, 1988).

The relative size of the informal sector tends to increase with many forms of government regulation of the labor market, including high social insurance taxes on labor, effectively enforced minimum wage legislation, lifetime job security provisions, and mandated fringe benefits, such as in health care and, especially in the transition countries, firm provided housing for workers. The consequences of creating this dichotomy between formal and informal sectors and jobs are sufficiently complex and interdependent with other distortions in the economy that there are few generalizations that stand out from the existing empirical literature. Nonetheless, a predominant view emerges from studies in Latin America and Eastern Europe that the inefficiencies introduced by labor market regulations are a substantial impediment to growth, as was concluded from the initial appraisal of the problem of labor market inflexibility in Western Europe.

3.4 Public-Private Wage Differentials and Employment Conditions

One plausible distortion in the labor market is between the public and private sectors, given the lack of competitive pressures on the public sector and its capacities to draw subsidies and create its own protection. With public access to large household surveys or censuses that collect information on wages and worker characteristics, it has become a routine task to analyze public/private wage structures, conditional on such worker characteristics as years of schooling completed, years of postschooling experience (or age), and sex (e.g. Lindauer and Sabot, 1983; Hartog and Oosterbeek, 1993).

Although exercises of this type can be informative, they may not accurately portray an

inefficient distortion in wages between the private and public sectors, because unobserved differences in the productivity of workers may vary between the two sectors. For example, women are sometimes observed to receive higher wages relative to men in the public sector than they do in the private sector, and this might be interpreted as discrimination against women in the private sector. But because entry into the two sectors is selective on the part of workers, and hiring may also be selective on the part of employers, there is reason to expect some sample-selection bias in estimating the wage function for either sector. Comparisons across sectors of the uncorrected parameter estimates of wage functions within sectors, using standard methods to decompose the sources of group (i.e. gender) differences in wages between sectors (or groups) can be misleading (Schultz, 1993). Women entering public sector employment are often pursuing different career objectives from those working in the private sector and are less likely to interrupt their time in the labor force for other family tasks. The age or post-school years of experience of women may thus represent more accurately the relevant job experiences of women in the public sector than will post-school years of experience of women in the private sector. Estimates of age-wage profiles will then tend to be steeper for women in the public sector than the private sector. One reason could be that the age/experience variable measures relevant labor market experience with more measurement error for women in the private sector than in the public sector, biasing down the experience profile parameters in the private sector. The same reasoning explains why the average age-wage profiles for women will tend to be flatter than for men: age measures the conceptually relevant labor market experience variable with greater error for women than for men, or in other words, the discrepancy between actual and potential post-schooling experience increases more rapidly with age for women than for men.

More comprehensive analyses have sought to explain both the wage structures in the public

and private sectors as well as the process of allocating workers between the sectors. These sample selection models generally depend on identifying information in the form of observed variables that are hypothesized to influence the selection decision rule by sector, but theoretically do not play a part in the determination of worker productivity or wages (van der Gaag and Vijverberg, 1988; Gjourko and Tracy, 1988; Stelcner et al., 1989; Schultz, 1993; Terrel, 1993; Assad, 1997; Tansel, 1998). As improved methods are brought to bear on this issue, public sector administration wages are sometimes found to be slightly lower than private sector wages.[6] These findings might still be accounted for by the greater security of public employment due to bureaucratic rigidities that limit firing of civil servants, even in Chile after its labor market reforms (Romaguera et al., 1995).

It is important to distinguish between public administrative employment, for which it is typically difficult to assess the productivity of bureaucracies or even the output of professors and medical personnel, and employment in state-owned enterprise, where outputs may be competitively marketed and the productivity of workers compared more readily with workers in the private sector. It is, however, more likely for state owned enterprises to exist in a protected niche and receive a variety of hidden subsidies. I have not found public/private wage and employment studies of this type conducted over time in a period during which the labor market was reformed or privatization was implemented. Such investigations over time might provide a more satisfactory basis for evaluating the effects of these public labor market reforms.

Studies based on a single cross section of the labor force that finds specific public/private wage differentials cannot confidently attribute the differentials to a particular feature of the case study, such as the greater security of employment in the civil service that was postulated in the previous paragraph. There are of course anecdotal accounts of public sector wages collapsing in periods of public crisis and structural reform, in Africa for example in the 1980s. But these casual

observations are complemented by plausible stories suggesting that teachers with little pay work few hours, and eventually turn to local parents to make up the difference in their below-market public paycheck.

3.5 Inter-Industry Wage Differences

Differences in wages between industries have intrigued economists for a long time. Even with improving survey and census data on workers and their wages, and with more satisfactory panels that follow workers as they change jobs and sectors, there often remain differences between industry average wages (by education, age, and sex) for which there is no consensus explanation, e.g. expected risks of unemployment, accident and morbidity risks, nonmonetized compensation such as income in kind (e.g. housing) or fringe benefits such as health insurance, etc.

One relatively neglected factor behind labor market distortions by industry is the effective protection provided industries by trade regimes and domestic taxes/subsidies. Given protection in product markets, firms with such monopolistic power may be forced to share their rents with organized (or potentially organized) labor (Pencavel, 1995). This would seem to be a plausible explanation for why industry wage differentials in Colombia in 1973 were strongly positively correlated with the industry's level of effective protection (Schultz, 1982). The political economy of trade and domestic policy regimes should have much to say about sectoral distortions of labor markets (Krueger, 1974, 1983; 1992). But this link between micro econometric study of wages structures and the sectoral analyses of protection has not attracted much interest in developing countries where it could be a major source of labor market distortion and rent seeking activity (Krueger, 1982). The liberalization of the world trading system since the Second World War that should continue according to the 1994 Uruguay round multilateral trade agreement has reduced and

will reduce further inter-industry distortions that should impact labor markets. Documentation of the importance of this development must await future research.

3.6 Labor Unions as a Source of Factor Market Distortion

Unions represent a classic case of labor market dualism, where the monopolistic power of a firm or industry allows a collective bargaining agent for workers to restrict employment and raise wages in a firm or in a union represented industrial sector. Johnson and Mieszkowski (1970) emphasized the general equilibrium effects of such a union-wage-differential which would displace employment into the uncovered sector and lower that sector's competitively determined wage. Thus, the full reallocation effects of labor due to the union-induced wage-distortion would depend on labor supply and demand elasticities in both the covered and uncovered sectors and in home production (Pencavel, 1996). Unions can also improve labor productivity among their members, reducing the distortion associated with a given union-nonunion wage differential.

It is also often empirically observed that wage structures in union firms are less unequal than in nonunion firms, providing less incentive to invest in schooling and on-the-job training in a unionized firm (Freeman, 1980). Analyses of the United States and Canada confirm that perhaps a fifth of the increased inequality in wages since 1980 can be associated with the decreasing share of union workers (Lemieux, 1993).

As with minimum wages, union wage gains are likely to be concentrated among the middle and upper income workers in most low-income countries, though union members are more widely dispersed across the spectrum of wages in high-income countries. Consequently, in a low income economy the power of unions to raise wages for their members may be associated with raising wages at the top of the national distribution of wages and thereby adding to overall wage and income

inequalities, as illustrated in South Africa in 1993 (Schultz and Mwabu, 1998). Conversely, unions appear to be reducing wage inequality in the United States and Canada (Lemieux, 1993).

I have not seen evidence on whether labor market distortions due to unions are increasing or decreasing in the world as a whole. Their relative numerical strength has been declining in the U.S. and U.K., although the percentage union-nonunion wage differential does not appear to have diminished in recent decades (Blanchflower, 1997). If protective trade regimes were a major source of union wage power, labor market distortions attributable to unions should be widely diminishing, most notably in countries liberalizing their trade regimes.

However, the capacity of state-owned enterprises and their "union" constituencies to resist liberalization in such countries as India, China, and Russia, suggests that this form of political collusion may represent the largest remaining inefficiency in world labor markets.[7] Russian agricultural state enterprises are a vast sector with labor productivity well below the national average and yet endowed with some of the world's richest farmland. The Russian Sovhoz and Kolhoz show little tendency to be displaced by private entrants or restructured to respond more efficiently to international price incentives and to new high-return technologies. Agricultural labor market reforms in Russia have been undermined and delayed by the failure to create a market for land and to separate the worker's right to an ownership claim in the land from their expectation of being paid to work that land regardless of their productivity. In China the lack of marketable ownership of land and its periodic redistribution at the village level weakens incentives for the farmer to invest in improving the fertility of the land and to consolidate it into more efficient-sized production units.

3.7 Centralization of Wage Setting

There is conflicting evidence on the consequences of centralized collective bargaining on

macro economic performance (OECD, 1997). Bruno and Sachs (1985) found what they call corporatist institutional structures, which typically include centralized wage setting, were associated in the 1960s and 1970s with the ability of a country to reduce inflation with less of a reduction in its rate of economic growth. But their corporatist state involvement in wage setting typically combines a centralization in union-management wage negotiations and a national consensus to promote greater wage equality, as in Scandinavia and Netherlands, and to share widely the burdens of adjustment to clearly perceived macro economic shocks. Calmfors and Driffill (1988) reported a U shaped relationship between economic performance and centralization of a country's bargaining system, for which they hypothesized that highly decentralized bargaining allowed efficient competitive pressures to operate, and highly centralized systems allowed the inflationary externalities of wage setting to be internalized within the corporatist coalition. But extending this approach to the more recent period (through 1996) and allowing for other dimensions of the labor market to differ, such as union density, collective bargaining coverage, and coordination of negotiation across sectors, fails to find statistically significant robust performance effects of centralization per se (OECD, 1997). However, there does remain a robust inverse relationship between earnings inequality and the degree of centralization in wage setting. But even this inter-country correlation leaves interpretations of causality in doubt, for many institutional factors, policy instruments, and changes in the relative supplies of skilled/educated workers are determinants of earnings inequality.

The example of Japan in the 1970s that is used by Bruno and Sachs (1985) to illustrate their overall thesis is not similar to the centralized wage setting process in many OECD countries. Japan was able to reduce real wages promptly in response to the two increases in international oil prices so as to curb domestic demand and foster export growth needed to pay for the more costly energy imports, and thereby maintain their current account balance and resume smoothly their growth. Of

course, the United States and Europe experienced cycles of recession and unemployment, of different durations, to achieve their realignment of relative prices and structural adjustment to balance their international payments in this same period. But the Japanese achievement of coordinated adjustment in real wages cannot be attributed to a centralized union-management wage negotiation process, but to different attitudes toward sharing responsibility and a social consensus that encouraged groups to accept short-run losses to achieve widely recognized long-run gains.

3.8 The Transition from Planned to Market Economies

Many of the transition economies are in the process of constructing a political, legal, and economic systems that protect property rights of not only land, but also natural resources and industrial capital, while creating a tax system that withdraws government revenues from private income streams without unduly distorting production incentives. Providing a freer market for labor is an important ingredient in this process which appears to have occurred more readily in Eastern Europe than it has in Russia. Despite the great success of China doubling output from agriculture in the 1980s by decentralizing management to the household responsibility system, it has proven more difficult for China to create a free flow of labor out of agriculture as labor productivity in agriculture increased, and regional differentials in wages have grown wider. Workers born in rural areas are limited in their ability to respond to urban wage opportunities, except as temporary workers without rights to reside permanently in the city. What costs these rigidities impose on the overall labor market remain unassessed but are probably large and discourage firm-specific training of these temporary workers.

Given the complexity of the various changes occurring in the transition countries, do these reforms have common consequences on wage structures or the productivity of certain types of labor?

In the Czech Republic, Slovakia, Slovenia, and perhaps East Germany, it is possible to compare in similar labor market surveys the wage structures that prevailed before and after the end of Communism, although housing and services in kind are inadequately accounted for (Chase, 1997; Orazem and Vodopivec, 1994; Krueger and Pischke, 1995; Hunt, 1999b). A few changes in wage patterns emerge that seem to be a consequence of the change in economic regimes.

The percentage premium in wages for an additional year of schooling has tended to increase, particularly among younger workers with more recent secondary and higher educations. The informal private small enterprise sector is dominated by services which were relatively neglected under central planning and have grown, whereas employment in heavy industrial sectors has declined. The skills associated with services have gained ground relatively and most employment in the services is female, whereas skills in the declining heavy industries are more frequently provided by male worker. These sectoral shifts may explain small increases often noted in the wages of women workers relative to men in Eastern Europe. Despite subsidies for the poor and pensioners who are concentrated in rural areas, wages in urban based areas have advanced relative to rural, in accord with the relative productivity of urban industries compared with agriculture and rural natural-resource based industries. The upward slope of the wage profiles with age or postschooling experience has become flatter overall, as the experience of older workers is less relevant to the new economic opportunities and consequently less rewarded in the more competitive labor market.

In Communist Russia there appear to have been no national labor force surveys from which to benchmark changes that occurred after the onset of economic reforms. The starting point for comparisons of wage structures in Russia is therefore 1992, when the first monitoring survey was collected. However, the first surveys are drawn by the Russian state statistical agency for the World Bank, and may not be sampled representatively. Job turnover in 1992 is comparable in Russia to that

measured in industrially advanced market economies, but the shift from state owned enterprises to private employment initially at a very slow pace (Foley, 1997). Changes in the Russian wage structure are less notable than in Eastern Europe, with women's wages possibly declining relative to men's. Women are more likely than men to experience unemployment, and when women are unemployed they are more likely to exit the labor force than men (Foley, 1997). As in Eastern Europe, returns to secondary and perhaps higher education appear to have increased, but unemployment is moderately high among workers with university education, at least initially. In Russia the age-wage profiles have also become flatter, providing less of a wage premium for older workers and this development may partly explain the greater propensity for older worker to experience unemployment and then exit the labor force, as observed in East Germany. The gender gap in wages became more favorable to women in East Germany after reunification, but women lost their share of employment in the wake of these reforms (Hunt, 1999b), as if the evolution of the wage structure reduced the derived demands for the more costly female labor. In general, the transition reforms in Eastern Europe and Russia have increased the returns to schooling and decreased the relative wages of the old, with the relative wage status of women varying from country to country. In most of these countries birth rates have plunged, reducing a competing demand on women's time for child care, and yet their very high rates of labor force participation have tended to decline toward the levels observed in industrially advanced market economies.

China has only recently begun collecting systematically and sharing with social scientists large surveys of its population that include information on wages and worker characteristics. Most rural workers within China were employed within their family farms after the agricultural reforms starting in the late 1970s. Farm management and production surveys have been used to estimate agricultural production functions for a few local areas from which it should be possible to derive

estimates of the marginal product of labor. But these production function studies have not disaggregated labor inputs sufficiently by education, age and sex, to allow one to infer the wage structure in agriculture. Consequently, the available information on wage structures for China relates predominantly to workers in urban areas, and these urban surveys are consistently available only for about the last decade. Surveys also tend to be collected for only a few provinces in China at a time, raising the possibility that those provinces for which data are available are somehow unrepresentative of the total country.

With these caveats in mind regarding the information base on which to generalize about such a large and varied country as China, three recent surveys have been use to examine the structure of wages. Based on a 1989-1991 panel from the Economic Health and Nutrition Survey in 8 provinces, wage returns to schooling appear to be moderate, but tend to be greater for women than for men, 4 versus 2 percent per year of schooling completed, and rising over time. Women employed in urban areas in the state-owned enterprises receive lower wages than they do in the private sector, controlling for schooling, experience, and province. The wage gap between men and women with comparable productive characteristics is on the order of 15 percent (Subramaniam, 1997).

A Survey of Income Distribution in 1995 conducted in 11 provinces supported by the Asian Development Bank showed somewhat larger returns to schooling, also favoring women, with a similar 15-20 percent gender wage difference after holding the standard worker characteristic variables constant (Asian Development Bank, 1998). Finally, a sample survey of urban households collected by the State Statistical Bureau from three provinces in 1986/1987 and 1993/1994 provides a third view of changes in wage structure (Yu, 1998). Returns to primary education decreased in this seven year period, whereas secondary and higher and vocational schooling returns were initially higher than primary returns and increased for both men and women. The differences in wages

between provinces also increased, with the advantage in Guangdong over Hunan and Sichuan province growing from 30 to 70 percent. Returns to education increase in general, but they are higher in the interior, poorer provinces where the relative supply of educated workers is lower. The gender difference in wages not explained by a regression decomposition of the conventional wage function increases from 16 to 24 percent. There are indications that the age profiles of wages have become flatter, suggesting that the wage premia received by older workers is falling. These three studies of China confirm that regional differences are growing, educational returns are moderate but growing larger, and gender differences are relatively moderate and increasing.

These indicators of change in wage structure from the labor markets of countries moving from central planning to market orientation have several common features: they indicate growing rewards for schooling, diminishing differentials favoring the old, while the young may be receiving higher premia for their first years of labor market experience in the new market environment. Also, most studies indicate that wage inequality measured by the variance of the log of wages is increasing, not only because of the increase in educational differentials in wages, but also because of an increase in the unexplained wage inequality within age, education, sex, and region groups. This latter development is also notable in some industrially advanced countries such as the United States, and has been interpreted as the returns to unobserved skills. In Eastern Europe, Russia and China these within group wage inequalities are also increasing over the time period observed. Wage differentials set by the bureaucratic centrally-planned regimes appear to have been smaller than those arising in the more market-oriented regimes that have begun to take their place.

4. DATA REQUIREMENTS FOR THE EVALUATION OF LABOR MARKET REFORMS

The data required to evaluate labor market reforms would ideally include a series of household

surveys with comprehensive labor force information, including all forms of compensation. They would span the period of the reform, and continue for a sufficient time to capture lags in adjustment to the reforms, which may involve several years, given the persistence of individual wages in many settings. In repeated independent cross sections, however, there may still be unobserved differences among workers with the same observed productive characteristics before and after the reform, and these unobserved changing characteristics could account for the outcomes of interest. Therefore, it is valuable to have information collected from the same individuals over time in the form of a panel survey, which allows one to control for persistent heterogeneity across persons (Freeman, 1984). The problems of correcting for attrition bias in such panels appears to be less serious than the heterogeneity bias arising from the unobserved differences related to reforms (Manski and Altonji, 1998). There are only a few high-income industrially-advanced countries that have such panel survey programs, the noted examples being the Panel of Income Dynamics and the National Labor Force Surveys of Youth in the United States and the German Socio-Economic Panel. Brazil has a new labor force panel survey, which may in the future allow economists to evaluate the labor market impact of short run changes in Brazil's labor legislation and economic changes.

In addition, for confident attribution of the effect of labor market reform, other simultaneous changes in policies or programs should not be occurring that might affect directly or indirectly the labor force. Multiple simulataneous policy interventions complicate greatly the evaluation task, as in the transition economies. The most convincing cases of policy evaluation arise when reform legislation varies the definition of eligible population for some program, and a seemingly arbitrary difference in age, or residential location, defines the moving boundary for those who can receive the benefits of a specific program.[8]

Another approach is for the sub-national administrative units in a country to introduce labor

market reforms according to their own time-table or with distinctive legislated features that allow the researcher to identify who should be effected by the program across subregions within a population. Governments organized along federal lines may provide subnational administrative regions with flexibility to pursue different reforms at different times, and yet national data gathering occurs at frequent intervals for the entire population. The United States has provided its states with some independence in legislating major changes in welfare and labor force regulations. Thus, the duration of unemployment benefits and their size have often been a state prerogative, providing the researcher with some cross sectional and time series variation in program design and change. Similarly, minimum wage legislation is set by the federal government, but can be and is augmented by states. The problem remains, however, that the states that take the lead in adopting more generous (or less generous) policies may not be random, but correlated with other factors that also influence labor market outcomes.

It is unlikely that fundamental reforms of the labor market will be pursued in isolation, and this independence of policy is only assumed to justify the evaluation methods. Nor is it likely that subnational administrative units will randomly adopt reforms of basic labor market policies to help economists evaluate their independent consequences (Heckman, et al. 1998). The prospects are thus not bright for obtaining the perfect data to evaluate how labor market reforms contribute to economic development. But as evaluation of localized and relatively isolated labor market reforms become more commonplace, our body of knowledge should accumulate on how to best assess the magnitude of the distortions caused by specific labor policies and programs. What has been costly in the past, and can be predictably reformed, will become top targets for future reforms.

5. TRENDS AND POLICY OPTIONS IN THE LABOR MARKET

Looking forward, several trends are likely to continue. The nature of these trends may suggest ways in which labor market reforms could be better designed or more precisely evaluated. Trade liberalization has probably been the most pervasive force changing the world's economies and perhaps also the most critical constraint on the performance of the labor market. Growth in international trade should continue to outstrip the growth in world GNP, and national economies will become, in some sense, more open to international prices and the relative values of different types of labor. The decline in the relative wages of less educated workers in the industrially advanced countries, noted from about 1980, is widely attributed to a technological change, or more precisely these relative wage changes are a residual that cannot otherwise be accounted for by the relative supplies of educated workers, or the industrial composition of output, or demands in national economies. However, in some low-income countries such as China, and perhaps India, returns to schooling among workers are also on the rise. This could be due to the increasing international market orientation in these economies and an opening to foreign investment that has bid up the wage for more educated workers in export manufacturing industries. Eastern Europe, Russia, Chile, and Mexico are also undergoing a widening in educational wage differentials, at least in manufacturing (Robbins, 1995).[9] Thus, the consequences of growing trade liberalization and transition and the disequilibrium they introduce may raise returns to education, as workers and entrepreneurs with more schooling demonstrate they are better equipped at adapting to the new opportunities opened up by this disequilibrium (Schultz, 1975).

In response to this trend in returns to schooling the public sector will be called upon to coordinate the expansion of the national educational system, and assign resources to those segments where the social returns to schooling are greatest. Regulations on the private educational sector should also be relaxed so it can also contribute in a complementary fashion to the appropriate

expansion in and diversification of the supply of educated workers.

A second trend that has become well established in the last several decades is the increase in women's participation in the labor force outside of their own family or business. This trend of increasing women's participation in the wage labor force should, by itself, contribute to reducing women's wages relative to men's, at least initially. But instead, women's wages have in many countries increased relative to those received by men, and fragmentary evidence suggests this pattern is spreading. This change in wages may be explained either by a shift in demand toward those products and services that women have a comparative advantage in producing, or it may be explained by women upgrading their labor market skills more rapidly than men. The latter appears to be the case with regard to schooling, where the ratio of the years of schooling of women to that of men has been increasing in all regions since early UNESCO estimates became available in the 1960s (Schultz, 1987, 1995), and the absolute difference in years of schooling between men and women started to decrease in the world after about 1980, at least according to Barro and Lee's (1994) estimates. However, these gender differences in years of schooling are still not closing as of 1985 in South and West Asia and Africa (Schultz, 1998b). If these world trends in schooling continue, women's wages relative to men's should follow in the future. The rising educational attainment of young women is also closely linked to their later age-at-marriage and decline in lifetime fertility, which will contribute to the further growth in the supply of female labor to the market labor force.

Accommodating the growth in female labor force participation and labor supply may call for some public efforts to reduce labor market dualism that discourages the hiring and training of women, and to open specific occupational and industrial segments of the labor force that have been traditionally sex segregated. With increasing incomes, the demand for services tends to grow as a fraction of income. Some of these services may prove to be surprisingly tradeable, such as certain

financial services and programming, and may gravitate to low-wage better educated countries. Much of the growth in female labor supply is likely to be in rural areas. In South Asian cultures it may be difficult for young women to leave rural areas without their men folk, whereas industries could locate in rural areas with improved infrastructure and employ the low cost local supply of female labor. Imagination and caution will be required to design legislation to realize these social gains.

Investment in the education of women and men is a high priority, with private rates of return being substantial at the primary education level, until nearly all youth complete this rudimentary education. Secondary education is then likely to be the highest social return activity. On average, private and social returns are higher for women than for men, especially in the societies where women receive much less than half of the schooling (Schultz, 1995). Since rural education will facilitate migration to take urban jobs, much of the social gains to this education accrue in the urban sector. The rural population may not be expected to finance all of the public costs of rural education under these conditions. The central government should therefore subsidize the availability and quality of rural schools both on grounds of efficiency and equity, because the rural areas are poorer and more likely to be credit constrained in their investment in human capital. The out-migration from agriculture should also be encouraged as labor productivity in agriculture increases and urban employment growth progresses, to prevent income inequalities between regions from growing wider.

Large and sometimes growing regional inequalities are a serious challenge for world development. When they are contained within a country there is a clear reason to promote interregional mobility, to help raise the income opportunities of migrants, and for society to raise the income opportunities of those who remain behind in the lower income sending regions. Democracy and the federal political process give administrative and financial power to the states in proportion to their populations, which provides politicians in the low-income states an incentive to attract

resources to the state but to resist outmigration. Yet the lesson of numerous public programs that have sought to encourage migration to the poor frontiers of a nation, such as Brazil and Indonesia, or to subsidize private investment in low wage states, is clear: few such programs work in the sense of reducing wage differentials between high and low income states. Few low income states have taken the reverse and economically promising approach of facilitating outmigration by facilitating job matching, information dissemination, and credits to finance out-migration. The initiative for such programs will have to come from a federal government. With the reported success of joint group liability lending programs to poor women with little collateral, e.g. Grameen Bank of Bangladesh, there should be an opportunity in the case of interregional migration to devise a way to provide small loans to invest in out-migration and secure repayment, perhaps by making the repayment of an individual's loan a requirement before the next member of the origin village community (or family) can qualify for a subsequent rotating loan.

Unemployment insurance and severance payments could be designed to increase labor market flexibility by moderating firing costs for employers, moving more of these insurance costs from the payroll tax to a broader based centralized tax, leaving only a fraction of the firm's past excess turnover as a penalty tax (experience rating) for cyclically varying its employment level and presumably underinvesting in the firm's (temporary) workers.

Minimum wages could also be designed not to discriminate against the employment of demographic groups with lower than average wages. The young and women are particularly harmed by minimum wages that are likely to exclude them from formal sector jobs where training might help to raise their skills and productivity. The levels of minimum wages should be legislated at a low enough level not to affect the great majority of workers in both the formal and informal sectors, and coverage should legally apply to both sectors, even if enforcement would be problematic in some

settings.

Can medical care insurance be funded by the central government, so as not to discriminate between the formal sector which receives this higher quality care and the informal sector which must rely on poorer quality public clinics? Moving the costs of medical care and unemployment insurance from firm-based payroll taxes to central government taxes on value-added, income, or sales should reduce the distortion currently existing between the formal and informal sectors of many economies and should improve the allocative efficiency of the labor market. Shifting some fraction of pensions to the private sector, as Chile and now Argentina and Mexico have done, could go further to diminish the wedge between the formal and informal sectors. Clearly, the decision to provide medical and pension program to all workers is a major but very costly step toward the welfare state that was implicated in the inflexibility noted in the western European economies of late. Yet to eliminate the distortion represented by the formal and informal sectors of the labor market, the 50-75% payroll taxes of the formal sector must be somehow reduced, and this can be achieved only by substituting a less distorting taxation system for the current tax on labor in the covered sector.

Segmentation in the labor force by ethnic minorities should be dealt with, as in the case of women and the poorer segments of the rural population, by designing ways for the central government to subsidize educational facilities in the regions where the poor ethnic groups are concentrated. Helping these groups through human capital credit programs for out-migrations and investment in schooling could be economically advantageous and prevent the gap between the incomes of ethnic minorities and the rest of society from widening further.

Finally, I have hypothesized that trade liberalization has been a powerful force reducing distortions that favor one industry or group of producers vis-a-vis another. Reducing these rents at the source, through trade liberalization, should reduce the power of unions and other coalitions to

raise wages inefficiently for one group as opposed to another. Segmentation in the labor market promises to be eroded by equalizing the margin of effective protection across an economy and lowering the average level of such protection. There may be a good case to compensate, through temporary credits for training investment or relocation costs, those who are most directly hurt by trade liberalization and structural adjustment. Redistributing these benefits and costs should be beneficial, but quantifying who bears the costs and setting limits on the duration of benefits will be a challenge.

The lack of literature evaluating the costs and benefits of labor market reforms does not indicate that reforms have not occurred, or that they have not made a major contribution to output and growth. Casual evidence indicates that labor markets have been exceedingly flexible and important for the growth achieved in such countries as Taiwan and Korea (Kim and Topel, 1995), for the agricultural productivity growth in China during the 1980s, and in Chile after 1982, for example. Why is research in this field so sparse, and what would improve it?

6. WHAT RESEARCH WOULD INFORM POLICY

Household records from representative labor force surveys are the foundation for most labor market policy research. Only a few countries and regions, such as the Arab Middle East, India, parts of Africa, and Japan, continue to restrict the public's access to these surveys or simply fail to collect them as a routine matter. A high priority is to encourage those countries without regular household surveys to establish them, and to make these data available in all countries to the public, with information on the region where each household is interviewed to link to local policy conditions, while taking the necessary precautions to preserve individual respondent confidentiality. Governments should be convinced to place their surveys in the public domain. To inform policy

about labor markets requires first that the research community consult such data.

Where this tradition of routinized randomly sampled household surveys has become established, research can proceed in many directions to analyze the sources of segmentation in the labor force and to quantify the magnitude of the distortions that result from public policies and misguided institutions. As in most research, quantification will proceed in steps, dealing sequentially first with the major sources of heterogeneity among workers, and then develop approaches for dealing with more minor sources of statistical bias, i.e. sample selection and measurement error. Although heterogeneity of workers remains a source of uncertainty, comparisons of wage structures in different sectors of the economy can begin to inform policy by assigning an approximate magnitude to the differences between the wages of worker in the two sectors who otherwise appear comparable in terms of observable (exogenous) characteristics.

When these group differences in wages are very large, as when a male unionized worker receives an hourly wage that is 145 percent larger than a male nonunion worker in South Africa, matched by years of education and age, a prima facie conclusion is that these two sectors in South Africa are not jointly efficiently allocating labor (Schultz and Mwabu, 1998). Perhaps 10 or 15 percent intersectoral wage differences might be explained in terms of the unionized firms in their hiring selecting only the more productive workers or paying efficiency (higher) wages to create incentives to reduce shirking, etc. Thus, simple analyses of labor market surveys can focus attention on sectors where policy reforms have the greatest likelihood of raising productivity. How such reforms can be accomplished involves much more complex institutional and political issues.

Similarly, comparisons of wages of workers in state owned firms and private firms should help in setting priorities for where privatization should be explored or other competitive pressures introduced. Marked wage differences between industries also should alert the policymaker to the

possibility that high-wage industries may not be competitive, they may receive a disproportionate level of protection from imports, or receive disproportionate subsidies from the state, and so on. Once labor force surveys are readily available to researchers outside of the government, these wage differentials should begin to inform policy -- not only in the labor market, but in determining trade regulations, taxes, subsidies, and how to organize industries to operate competitively. It is not surprising that the countries which have continued to restrict the release of their labor force surveys, except to possibly publish government cross tabulations of the data, tend to have the more distorted and segmented labor markets and probably rank among the least competitive economies. Thus, these are the very countries which have the most to gain socially from reforming their labor market, and also the strongest vested interests in resisting such reforms.

Many policy questions can be addressed with a single cross sectional survey of modest size, of about five thousand households. But with the establishment of such surveys, it is possible to evaluate the consequences of change in public policies on the changes in wage structures, employment composition, and the personal distribution of consumption that emerge after a policy reform. Evidence from this form of before-and-after comparison is more compelling than the single static comparisons of intersectoral differences in wage structures, for there are always many other things that differ between sectors and cannot be held constant that could explain a group difference in wages. Changes in official policy take time to erode long-established wage differences between groups of workers. The policy evaluation process can draw its final conclusions on the consequences of reform only after the elapse of time.

Surveys that try to follow the same persons over time, as public policies evolve, have great appeal, because these panel data permit the researcher to hold constant all the unobserved persistent characteristics of the individual, while comparing her/his evolution in the labor market. But these

panel surveys are costly and are likely to remain luxuries of the high-income countries, except where they are absolutely necessary for obtaining a critical policy parameter.

In the last thirty years, the annual number of professionally collected household labor force and income-expenditure surveys in the low-income world has probably increased ten- or twenty-fold. But the number of economists and statisticians trained to analyze these micro survey data to inform government policymakers would seem to have increased more slowly. The social value of their potential policy analyses should now be large. However, there is a chicken-egg problem of attributing causal effects. More widely accessible data of this form may increase the usefulness and precision of such research on labor markets, while the dearth of policy-oriented labor market research leads governments to conclude that extensive household survey programs are expensive for their policy payoff. Without these data available to researchers, young economists from these developing countries may reasonably opt to concentrate on theory, whereas with assured access to these data, more young economists might specialize in a balanced portfolio of economic theory and empirical economics. Developing a better understanding this dynamic problem of data generation and policy analysis, and implementing a remedy, could contribute to development in many poor parts of the world. In the last thirty years, I would guess that the number of competently collected household labor force and income-expenditure surveys in the low-income world has increased ten- or twenty-fold. But the number of economists and statisticians trained to analyze these survey data to inform government policymakers has increased more slowly, although the value to their societies of their analyses of labor markets could be substantial. However, there is a complicated chicken-egg problem here. More available data increases the precision and usefulness of such research on labor markets, and the lack of policy oriented labor market research leads governments to undervalue the policy payoff to more extensive programs of household survey collection. Without the data young

economists from these developing countries are wise to remain theorists. There is a complex dynamic problem here that I encourage us to model with care and change.

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Endnotes

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2. The informal sector employers also have difficulty gaining access to an export market for their output, because government regulation of foreign exchange markets can require them to submit to the labor market regulation regime.

3. Counter examples are also to be found. Korea in the 1970s and 1980s increased its employment in manufacturing, invested heavily in training of its work force, and achieved remarkable growth in labor productivity. Nonetheless, high levels of turnover of workers was evident, where the typical worker in manufacturing was hired directly out of school but had job durations of only 4 years, on average, compared with 9 in the United States and higher in Japan (Kim and Topel, 1995). The rapid turnover of workers in the Korean case did not appear to reduce the motivation for Korean firms to make their heavy commitment to training (World Bank, 1995). This highly educated and mobile labor force was a strength of the Korean economy in helping it deal with structural changes.

4. Unemployment becomes more difficult to quantify and validate in a survey among the self employed, those working in a family unpaid job, or even working in casual work that is not specified by a contract or subject to the withholding of taxes or social insurance payments. Self-employed farmers, for example, may be underemployed in a particular season of the year, as in the North of Thailand, but then substitute to that time of year other activities that are not tied to season, such as maintenance investments, or temporary migration.

5. For example, in countries with incomes per capita of about $2000 in 1995 the PPP units ratio

of minimum wages to GNP per capita is 1.0, whereas this ratio falls to 0.5 for countries with an average income per capita of $8000. (World Bank Staff, 1995).

6. Few survey data sources obtain good data on the value of fringe benefits; perhaps this is due to the workers not knowing their cost or having a clear idea of their monetary value. Most studies are of wages plus income in kind, but not total compensation.

7. Many examples can be found where state owned enterprises lobby as unions and management to maintain the wage growth of workers despite meager gains in productivity and declining international prices of the sector's output. The Indian coal industry is such an example often cited where disciplining the sector has not proven effective, and privatization might therefore appear to be a promising strategy for policy reform. (Banerji and Sabot, 1993; Horton, et al. 1995; Rama, 1994; World Bank Staff, 1995).

8. For example, mothers with children born after a specific year are eligible for a free medical care program in the United States, whereas they are not in previous years, or the eligibility of medicaid increases in a particular year from only mothers below the poverty line, to mothers below 1.33 times the poverty line. Thus, change in the legislative limits on eligibility for a program is one method for extracting from a series of cross sectional surveys or a panel survey estimates of how economic behavior has changed as a result of the program expansion (or contraction) and what the welfare consequences of this change in eligibility are (e.g. Currie, 1995).

9. These patterns of increased relative wages of skilled labor in countries with both an abundance and shortage of skilled labor should not be interpreted as a contradiction of Hecksher-Ohlin-Samuelson model, for many other conditions are changing.