

Conditions of Work and Employment Programme

***Labour market regulation:  
Motives, measures, effects***

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ISBN 978-92-2-122009-1 (print version)

ISBN 978-92-2-122010-7 (.pdf version)

*First published 2009*

*Cover: DTP/Design Unit, ILO*

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Printed by the International Labour Office, Geneva, Switzerland

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## Preface

Labour market regulation is the subject of much theoretical work as well as of extensive measurement and empirical assessment efforts. In recent years, economists have paid much attention to this issue, with a strong focus on three major aspects of labour regulation: (1) rent-seeking tools which are meant to alter distribution at the expense of production efficiency; (2) buffers to limit the impact of self-interested behaviours on social interactions, thereby preserving the dignity of workers as well as their collective incentives for work; and (3) remedies for market imperfections, notably as regards provision of insurance, and of efficient reallocation, retraining and job-seeking activities.

In this paper, Professor Bertola reviews these three views from both theoretical and empirical perspectives, highlighting the fact that full *laissez faire* can be inappropriate for solving problems of allocation and pay in the labour market in the presence of political-economic tensions, imperfect information and enforcement problems. His review clearly points to the critical importance of a “balanced” theoretical framework of labour regulation which takes into account how historical, political and economic structural factors shape the motivation and effects of labour market policies. He concludes by outlining directions for future research, particularly concerning empirical work on the determinants of labour market institutions in rapidly changing environments.

This paper is an input to our new project on Regulating for Decent Work, which aims at creating an international research network with a view to advancing research and policy directions tailored towards making labour market regulation more effective. The starting point of this project is that carefully designed regulations and enforcement mechanisms are essential to the goal of improving working life. The project is interdisciplinary and involves researchers from a range of fields including economics, law, sociology and industrial relations.

It is hoped that this paper will stimulate a more-balanced debate on labour regulation issues, thereby contributing to making regulations more effective.

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## Introduction

Labour market institutions that influence the level, stability and dispersion of employment and labour costs would make no sense in an otherwise perfect world where markets maximized the welfare of a “representative agent”. In that world, any interference with *laissez faire* outcomes could only be motivated by “rent-seeking” redistribution motives, would tend to be circumvented by efficient individual choices and, to the extent that it is not completely ineffective, would decrease efficiency. The real world is not perfect, however, so labour market regulation does shape market interactions, and collective policies can pursue meaningful, if certainly debatable, goals.

Interference with labour market outcomes does influence the distribution of welfare across heterogeneous individuals in ways that, just because markets are neither perfect nor complete, cannot be replaced by theoretically more efficient *ex ante* redistribution. For the same reason, collective policy interventions can affect aggregate welfare as well as its distribution. Unemployment may be due to collective interference with *laissez faire* market interactions, but these outcomes and institutions are a symptom of underlying problems. Wage and employment choices are constrained at the individual level for potentially sensible reasons in a world of imperfect labour and financial markets. Higher wages and lower employment can be beneficial for individuals who cannot access financial markets and therefore have negligible non-labour income. And limitations of individual workers’ access to financial instruments can similarly rationalize collectively administered risk-sharing schemes.

This paper organizes a review of theories, facts and findings around such insights. Its discussion of the institutional configurations of labour markets pays particular attention to the joint operation of employment and wage rigidities. Its interpretation of their motivation and implications focuses on relationships between the organization of labour markets and other structural and economic features, both across countries and in different historical circumstances, with particular attention to international aspects of the relevant issues.

Section 1 reviews theoretical approaches to the motivation and implications of labour market regulation. Interference with market outcomes may be based on rent-seeking motives, and be meant to alter the distribution of income between labour and other factors of production while inefficiently reducing the amount of output produced by available resource. Collective constraints on individual choices may, however, buffer the impact on social interactions of self-interested economic behaviour, preserving the dignity of workers as well as their collective incentives to provide effort, and may remedy market imperfections, not only as regards the allocation and pay of labour but also, and arguably more importantly, as regards provision of insurance and of efficient incentives to undertake human capital investments.

These views all highlight, from different standpoints, the important and related information and enforcement problems encountered by markets in addressing welfare issues. Distributional tensions and socio-political considerations, while highly relevant, are rooted in underlying market imperfections. If markets were perfect, policies would be obviously counterproductive if effective, and would be easily circumvented – hence ineffective – by powerful efficiency-enhancing market transactions. In the real world, policy can address labour market imperfections, such as difficulties in matching demand and supply, and can also foster efficient labour reallocation and consumption smoothing in the presence of financial and other market imperfections.

Imperfections are many in the labour market, as in all markets where highly differentiated goods are traded in conditions of imperfect information. While governments and other collective bodies may exploit detection and enforcement powers superior to

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those available to private agents and private contracts, they may or may not be better informed than market participants regarding the structural features of economic interactions, and while information collection can provide a very useful public good, it can be very expensive and imprecise in our imperfect world. Thus, policies that affect employment and wage patterns need not improve on the *laissez faire* allocation of labour in general. Labour market regulation can also be motivated by financial market imperfections, however. A more general guiding principle for welfare-improving policy interventions may be focused on fostering suitable forward-looking decisions by workers. This entails a degree of labour-income stabilization, while preserving incentives for reallocation and retraining, so as to afford smoother consumption patterns.

Imperfect information about the availability and location of jobs has an important role in determining equilibrium unemployment, and asymmetric information in preventing coverage of unemployment risk. Private information by workers as to their own characteristics and work or job-seeking effort makes it difficult or impossible for markets to offer insurance against labour market risk. Collective policies may improve as well as redistribute welfare if based on more useful information and stronger enforcement powers than those available to market participants. But policy faces in practice much the same information constraints that prevent markets from achieving first-best equilibrium configurations. Information problems plague public intervention in both its efficiency-seeking and equity-seeking dimensions.

Clearly, workers have no less incentive to decrease their effort when covered by social, rather than private, insurance arrangements. The government's information-gathering and enforcement capacity may be superior to those of private agents, but are clearly not perfect. Hence, imperfect information about effort and/or about personal characteristics plagues social policy with the same moral-hazard and adverse-selection problems that make it so hard for private markets to provide insurance along with proper incentives. On the other side of the same coin, efficient provision of social protection cannot eradicate all "unfair" inequality. If individual characteristics and behaviour are not verifiable, then richer individuals may take advantage of subsidies or tax exemptions meant to benefit a society's most unfortunate members.

The remainder of the paper reviews how these insights can inform assessment of existing indicators and empirical findings. It does not report statistics, and it does not attempt to provide a comprehensive survey of the relevant literature and evidence. Many recent and less-recent surveys already exist, from Bean (1994) to Bertola (1999) to Arpaia and Mourre (2005) and Young (2003). Exhaustive (if always debatable) bodies of evidence are provided by many of the relevant contributions, such as Bassanini and Duval (2006) and Amable, Demmou and Gatti (2007) among the most recent and comprehensive. Here, the aim is that of outlining a conceptual guide to interpreting and linking together a vast range of indicators, empirical findings, theoretical insights and policy issues.

The review and discussion of measurement and assessment problems in Section 2 is motivated by practical problems in the implementation of theoretically desirable policies and, more specifically, by the need to take into account market participant's reactions and implementation issues when assessing the tightness of regulatory constraints. It refers to standard policy classifications distinguishing collective constraints on wage determination from constraints on dismissals, and "active" from "passive" policies. But it strives to consider how the pros and cons of each policy instrument depend on more general aspects, highlighting relationships between different policies and more general and deeper aspects of the economy's allocation and distribution mechanisms, including the structural and institutional features of markets other than the labour market. As to measurement, theoretical models necessarily summarize a complex reality in simple form, and empirical assessment of theoretical insights needs to be based on similarly simple summaries of complex legislation and customs. Such indicators are useful when account is taken of key

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theoretical mechanism in their construction, which may combine survey- and legislation-based indicators with indicators of economic conditions, and when assessing and interpreting the stringency of regulation across otherwise similar labor markets.

Regulatory indicators of institutional “rigidity” can, in turn, be related to a variety of related outcome indicators. The resulting empirical picture, reviewed in Section 3 of the paper, offers tests of simple theoretical mechanisms as well as validation procedures for institutional indicators. The literature has been able to detect meaningful associations between institutions and outcomes, both desirable (such as labour income stability) and undesirable (such as low and heterogeneous employment rates). A review of cross-country evidence highlights relationships between labour-market and other aspects of structure and institutions in different countries, while also making it clear that empirical evidence from samples of heterogeneous countries is difficult, especially when they include less-developed countries (rather than on standard OECD panel data), and emphasizing the importance of accounting for structural and historical features in determining both institutional choices and labour market outcomes. To the extent that theoretical and empirical work supports a view of labour market regulation as a collective choice along tradeoffs, that view begs the question of what specific features of the relevant tradeoffs or of the collective choice problem may explain the wide variety of labour market configurations across countries, and may determine the desirability of labour market reforms.

From such a perspective, Section 4 reviews reform tensions, discussing how the determinants of the state and evolution of the labour market regulation’s pros and cons may bear on policy choices, and focusing particular on ways in which improved opportunities for income and consumption smoothing may make labour market regulation less necessary in increasingly integrated open economies, at the same time as international competition tends to make labour market regulation less feasible in the absence of international policy cooperation. Section 5 offers brief concluding considerations on the relevance of inequality concerns to the desirability of labour market regulation, and of competitiveness concerns in motivating reforms.



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## 1. What regulation aims to do

If labour-market interactions were perfectly competitive and could rely on complete information (and the same were true of all other economic arrangements), then *laissez faire* allocations would be efficient. No policy intervention could increase output, and any distributional issues could and should be addressed by “lump-sum” means, without interfering with allocation and prices. Real-life markets are neither perfect nor complete, and this is especially true of the labour and financial markets that matter most for most people’s welfare. Market interactions are more complex and less likely to be optimal in the market for labour (as well as in other complex and important markets, e.g. those for medical and educational services) than in markets for standardized commodities. This is an important reason why taxes, subsidies and regulatory constraints are pervasive in all countries’ labour markets: if markets are prone to failure when left to their own devices, it is certainly not surprising to see policy-makers try and improve them.

Before reviewing in more detail such an economic perspective on policies, it is important to recognize that, even in the absence of legal and collective contractual constraints, wage and employment determination are seldom left completely to market determination on the basis of purely economic considerations. As forcefully argued by Solow (1990), the peculiarities of labour markets broadly reflects the special character of jobs and wages as a crucial determinant of status, as well as the role of social interactions in shaping incentives to provide effort. Sellers of standardized goods may not be offended by low prices, but a worker’s incentive to provide effort depends importantly on the perceived dignity of working conditions and fairness of wages. And while prices are determined by competition in impersonal and anonymous markets for goods, job-seekers may well feel that competing for fellow workers’ jobs would be socially offensive and unfair, and refrain, on the basis of such considerations, from bidding down their wages. Thus, wage and employment patterns may well deviate from the marginal productivity conditions that would be dictated by profit maximization in simpler markets: while not conducive to full equilibrium and high flexibility, socially-motivated interactions may support a potentially superior equilibrium characterized by trust and the absence of opportunistic behaviour.

From this point of view, more than economics matters for the interpretation and assessment of policy instruments that are not just an imperfect substitute for imperfect market interactions (see Agell, 1999, and Argandona, 2001, for related discussion). Collective policies can improve the standard of living to individuals who are not in a position to access markets on the basis of solidarity criteria similar to those that prevail within families, and can ease into society those who might otherwise resort to crime or revolution. Such social and political considerations, rather than more directly economic mechanisms, explain many features of real-life social policy systems. Labour regulations and employment-based contributory schemes, such as those introduced in Bismarck’s 19th-century Germany and still prevalent in most continental European countries, were meant to control not only market forces, but also revolutionary pressure; see Bertola et al. (2001) for references on this and other historical experiences, as well as the discussion below of the national character of social and labour market policy system and of their implications in the current internationalization phase. At a more fundamental level, social and legal conventions tend to limit the extent to which market forces are allowed to shape individual labour income: union activities are typically exempt from antitrust laws,<sup>1</sup> and

<sup>1</sup> Even in the unregulated market economy of the United States, legislation regarding organized labour rights is based on the notion that provides that the “labor of a human being is not a commodity or article of commerce” (Section 6, Clayton Act, 15 U.S.C. § 17).

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welfare safety nets aim at eliminating the need to bid for employment in order to preserve individual dignity, and achieve socially and politically valuable “decommodification” of labour (Esping-Andersen, 1990).

At the opposite extreme, labour market institutions may be viewed not as building blocks of social consensus, but as weapons in redistribution struggles between groups of economic agents, aimed at reaping larger shares of aggregate output.<sup>2</sup> This perspective, while again privileging political and other non-economic factors as determinants of observed institutions, focuses on the economic channels through which such tensions play out in market interactions. And it emphasizes the advantages of deregulation in that rent-seeking redistribution efforts tend to dissipate resources, reduce efficiency, and may well also foster inequality as income distribution on the basis of political strength need not be any less unfair, even in democratic systems, than their distribution on the basis of economic strength only.

In spite of their opposite emphasis and contrasting policy implications, these extreme interpretations of the role of labour market institutions have much in common with each other, and an extensive interpretation of the “market failures” approach outlined above can arguably encompass them in a unified conceptual framework. In reality, social, economic and political factors undoubtedly coexist and interact with each other. They can all be discussed in terms of deviations from the conceptually useful – albeit wholly unrealistic – “perfect markets” paradigm that would deny the usefulness of policy interferences with *laissez faire* market outcomes. And they all interact with the structure of real-life economies in ways that can help rationalize policies observed in real life. The importance of social norms in preventing opportunistic behaviour depends on the availability of alternative contractual enforcement methods. The effectiveness of labour market regulation in shifting welfare towards workers depends on the extent to which employers may flexibly adjust on other margins, which in turn reflect, among other factors, an economy's degree of openness to international trade and factor flows. The extent to which labour interests influence institutional arrangements reflects political factors, which in turn depends on a country's social and political structure. Social interaction mechanisms and redistribution policies that reduce inequality can efficiently prevent criminal behaviour and foster economic as well as social peace. And if notions of efficiency include stability and predictability of consumption patterns, as they should if individuals are averse to risk, labour market and social policies can address the shortcomings of real-life insurance and investment markets.

In this broad sense, against the background of a hypothetical representative agent economy where no policy would need to be implemented, inequality-reducing and income-shifting policies may after all be rationalized in terms of market failures. Of course, policy is also imperfect in practice: like markets, and interacting with them, institutions strive for the best possible balance of “flexibility” (efficient allocation of labour) and “security” (stability, and equality, of consumption). But social policy and labour market regulation cannot in practice reproduce the ideal, undistorted “first-best” configuration that the economy would reach if all markets worked perfectly, because institutions and policies have to contend with the same imperfections that make them desirable: there is only one “first-best”, but very many “second-best” situations, characterized by different distortions, and different costs and benefits for various policy interventions. While efficiency would be the only objective if a representative-individual view of economic welfare were warranted, in reality policy also has distributional objectives and effects. Policies that reduce

<sup>2</sup> See, for example, Saint Paul (2000) for a wide-ranging analysis of the politico-economic channel with special emphasis on redistribution across categories of workers; and Lindbeck and Snower (1988) for analyses of the impact of institutions on the relative welfare of employed “insiders” and unemployed “outsiders”.

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aggregate employment and output would make no sense to a representative agent, but they may be appealing for workers if their access to financial markets is difficult, and as such lets them earn a larger share of (albeit smaller) aggregate welfare.

In summary, labour-market institutions aim at increasing aggregate net output, and/or at reducing *ex post* inequality of outcomes for *ex ante* similar individuals, and/or at redistributing resources across different individuals. They are meant to improve outcomes for at least some market participants, and their incentives and ability to do so depend on structural features of the underlying system of economic and social interactions. From this perspective, the pros and cons of labour market institutions depend on deeper structural and political features of different economies. Implementation of legislation and other collective action reflects only the relative efficiency of market and policy mechanisms from a hypothetical representative agent's perspective but, in reality, also on whether and how financial and other market imperfections prevent workers from taking efficiency losses into account (Pissarides, 2001; Alvarez and Veracierto, 2001; Bertola, 2004a).

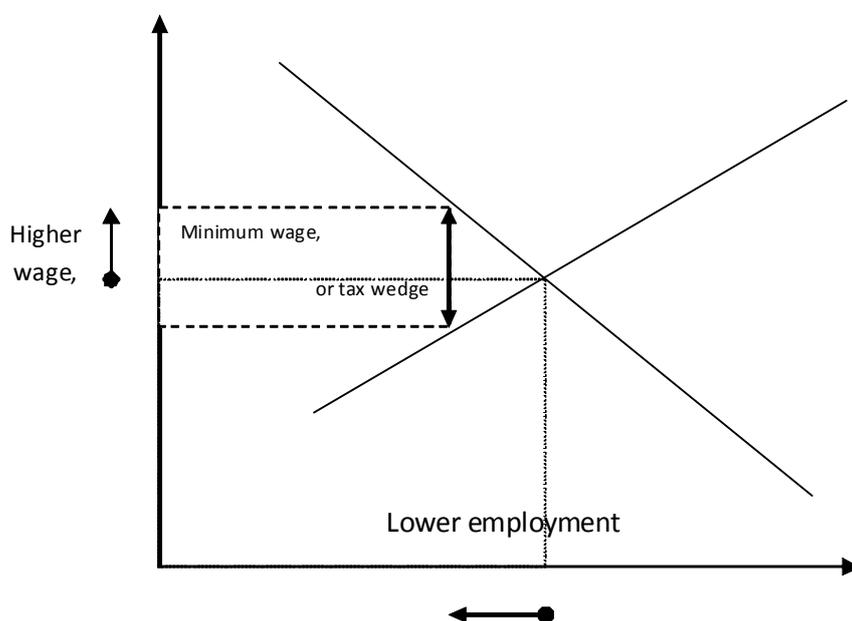
The following subsections discuss various dimensions and instruments of institutional, legal and policy interference with more or less imperfect labour market mechanisms. Needless to say, wages, employment and unemployment effects are all interlinked and, for this reason, the discussion of the configurations and outcomes of labour markets in the following section will emphasize patterns of co-variation across the dimensions considered.

## 1.1 Wages, labour costs and employment

A useful perspective on the distributional implications of labour market policies can be easily illustrated in the simple and familiar framework of Figure 1, where workers faced by a downward-sloping labour-demand relationship between wages and employment are collectively better off if the wage is set at a level higher than that which equates supply and demand. The preferred employment level for workers differs from that of a hypothetical representative individual interested in maximizing the economy's total production flow over and above the workers' non-employment opportunities. If workers only earn labour income, they do not mind reducing the portion of output that accrues to other factors of production. Hence, they prefer wages to be higher than those delivered by competitive interactions, and may gladly accept the reduction in employment that delivers that outcome. If the wage is increased above the level that equates aggregate supply and demand, workers who have no stake in profits or rents are collectively better off. Lower employment is a matter of indifference at the margin in *laissez faire*, and as wages become discretely higher than non-employment welfare, the simple sum of workers' utilities continues to increase until the lower welfare of workers who fall back on the outside opportunity more than compensates the higher wage earned by the workers who remain employed.<sup>3</sup>

<sup>3</sup> This point is reached sooner when labour supply is steeper. As discussed by Bertola, Blau and Kahn (2002), this can explain why labour market regulation tends to cause smaller employment losses for worker groups with rigid labour supply (such as prime-age males).

Figure 1: Regulation vs. *laissez faire*



When the wage is higher (and employment lower) than in competitive equilibrium, some workers would be willing to work at the going wage but remain unemployed. If they were allowed to underbid employed workers, the wage-setting outcome illustrated by Figure 1 would unravel to the competitive equilibrium. But while their welfare is lower when they fall back on the outside opportunity represented by the labour supply schedule, from the collective point of view it can be more than compensated by the higher wage earned by those who remain employed. As long as workers disregard the portion of production that is not paid out in terms of wages, it is in their collective interest to prevent wages from being bid down to the point of indifference.

This perspective can rationalize legal or contractual constraints that prevent the unemployed from underbidding employed workers. Of course, each unemployed worker would prefer to be employed, even at a lower wage, and this is the reason why underbidding would occur were it not prohibited. Obviously for this outcome to be agreeable to all workers, there must exist channels through which the higher wage enjoyed by workers who are still employed can be partly distributed to those who are *ex-post* unemployed. Such redistribution is natural if the two groups of workers are members of the same family, or the same persons at different ages: the unemployed may be sons and daughters of the employed, and can look forward to overall higher labour income over their lifetimes. Larger total income for workers and lower employment (and profits) may also be supported by a system of payroll taxation funding non-employment subsidies, such as pensions or unemployment benefits or other welfare transfers, or by public-sector employment opportunities at favourable wage/effort ratios (Algan, Cahuc and Zylberberg, 2002).

The purpose and effect of all such policies are similar to those of an explicit wage floor: while the latter prohibit workers from bidding down other workers' wages, income support eliminates the need to bid for employment. While contractual or legal lower bounds on wages result in open unemployment, tax-and-subsidy schemes imply a smaller

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labour force, and public jobs may actually increase the number (if not the effectiveness) of employed workers.

In all cases, the loss of efficiency has negative implications for aggregate production and for the economic welfare of a hypothetical representative agent who owned all other factors of production, as well as labour, in the aggregate proportions. Limited access to financial markets, and lack of ownership of non-labour income flows, can explain why workers find it useful to decrease employment even though that decreases total production and aggregate welfare. From a different but related perspective, one may view the *laissez faire* employment level and the resulting income distribution as “unfair” when workers do not partake of non-labour income. When all workers have the same opportunity cost of working, for example, the labour supply schedule is horizontal, and the competitive wage is such as to make them strictly indifferent between employment and non-employment in *laissez faire*, none of the economy’s production surplus accrues to workers.

## 1.2 Labour market imperfections

In reality, labour demand and supply interact in more complex ways than in Figure 1. The design and implementation of policy intervention are confronted by problems similar to those that prevent *laissez faire* markets from achieving first-best outcomes. Information problems, in particular, plague both market interactions and collective intervention pursuing efficiency and equity.

As in other important markets, such as medical services, regulation of working conditions is motivated by the inability of individual workers to assess the riskiness of their tasks and working conditions, and of employers to credibly attest the safety offered by their operations. As in other cases, asymmetric information makes it difficult for markets to operate: workers, knowing that it is in their employers’ interest to claim safety while saving on costs, should assume a worst-case scenario and, in equilibrium, conditions would indeed be dismal, and employment low. Minimum standards, and minimum wages, can also be rationalized by employers’ monopsony power in conditions of imperfect competition. If workers cannot freely choose among a variety of potential employers, it will be in the interest of employers faced by sloping labour supply functions to offer lower wages and worse working conditions than would be warranted in competitive equilibrium. This behaviour can be motivated by purely economic considerations, in that variations in the wages and working conditions offered to the “marginal” employee influence the whole wage bill in the eyes of an employer who is faced by a captive pool of workers, and does not treat the wage as a market-given constant. The result is that wages are set at a lower level than in competitive equilibrium, and employment is also lowered along the labour supply curve – rather than along the demand curve, as in Figure 1, where institutions moved the market’s wage and employment configuration away from the efficient point identified by the intersection of competitive demand and supply schedule.

If the *laissez faire* features monopsony power, conversely, it is inefficient from the purely economic point of view: a binding minimum wage can increase employment and production (see Manning, 2003, for an exhaustive treatment, which also covers the discussion of frictional unemployment mechanisms reviewed in the next subsection). The monopsony deviation from perfect competition also has distributional implications if (due to financial market imperfections, perhaps) workers and employers are distinct groups in society, and can of course also be viewed as a politically, socially or even morally “unfair” and exploitative practice.

While imperfections in the price-setting mechanism of labour markets may be widespread in *laissez faire*, and such as to prevent wages from responding to demand and supply influences as promptly as the price of commodities, their implications of this for

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evaluation of policies is not clear cut. As noted by Manning (2003, p. 365), appreciating the extent to which free market interactions are marred by imperfections should simply lead one to be open-minded about the impact of policy, which, depending on the economy's configuration and on parameter values, may differ sharply from what a competitive baseline would imply.

### 1.3 Unemployment and insurance

Labour market policies, in fact, play more complex roles in models that explicitly account for risk and imperfect information problems. Their impact depends on what causes unemployment in the first place, on equilibrium interactions, and on details of market structure and policy implementation.

If unemployment is due to the scarcity of information regarding vacant jobs, then unemployed workers are engaged in a useful, if time-consuming, activity. If no workers were searching for employment opportunities, no job would be found: hence, unemployment is a useful input in the production of "matches" between workers and jobs (see Mortensen and Pissarides, 1999a, 1999b). The efficiency of *laissez faire* equilibrium in matching models of the labour market, and the possible beneficial welfare effects of policy, depend on subtle features of the economic environment. Since market interactions are not mediated by competitive price signals, the aggregate productivity of vacancies and of search effort need not be appropriately taken into account by individual decision-makers. In *laissez faire*, unemployment can be too high but it can also be too low, depending on how the benefits of meetings between unemployed workers and employers, and on how the likelihood of such "matches" the two parties' search efforts (Hosios, 1990). In order to improve on the outcome of private decisions, collective policy would need to rely on detailed information regarding the economy's structure.

A more general case for policy intervention can be based on the fact that the information-gathering and enforcement facilities of collective agencies may well be superior to those of private insurance providers. Public unemployment insurance (UI) programmes can, in principle, remedy the market's inability to provide insurance. Private insurance contracts encounter "adverse selection" problems, whereby only the workers with the highest unemployment risk would find it useful to buy insurance at the market rate, which would therefore be unattractive for typical workers, and leave them uninsured. The government can solve this problem by making participation mandatory. Since workers have no less incentive to decrease their effort when covered by social instead of private insurance, of course, "moral hazard" remains a problem: as usual, policy interventions are unable to achieve first-best outcomes as their desirability is challenged by their own effects on economic agents' behaviour along margins where they respond to equally imperfect market incentives. To some extent, unemployment compensation reduces incentives to seek employment. But appropriately designed monitoring and incentive schemes can, in principle, be configured so as to ensure that any reduction of productive efficiency is more than offset by the benefits of smoother consumption patterns, and the government's superior information and enforcement may well achieve this more easily than private market interactions.

The government's ability to improve on *laissez faire* outcomes depends not only on its administrative prowess, but also on appropriate policy design, which again depends on availability of sufficiently precise information about such subtle structural features as the relevance of search effort to job finding probabilities and on workers' risk aversion and access to insurance. When unemployed workers are tempted to exert low search effort, a declining pattern of benefits can induce them to search intensely initially, and efficiently reduce the duration of unemployment even as the relatively high initial level of benefits affords the same overall insurance as a lower constant level would (Shavell and Weiss,

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1979). But the different search behaviour of unemployed workers influences the equilibrium distribution of wage offers: declining benefits can lead to inefficient rejection of low wage offers by unemployed workers receiving high initial benefits, even as their stronger search effort increases their rate of matching (Albrecht and Vroman, 2005), and high initial benefits can reduce “job retention” effort by currently employed workers (Wang and Williamson, 1996).

More generally, the benefits and costs of UI systems depend on the character of information problems and market interactions. Depending on relatively subtle features of the economic environment, for example, the qualitatively broad similarity of models – such as those of Shavell and Weiss (1979), Hopenhayn and Nicolini (1997), Shimer and Werning (2005) – sometimes yields dramatically different implications for the relationship between the time pattern of unemployment benefits, worker welfare and job finding probabilities. These and other theoretical studies let workers be risk averse, and unemployment benefits provide some of the insurance against the welfare implications of job loss that financial markets are realistically assumed incapable of supplying. The formal details of these models are complex, but their broad message is simple: UI policies can, but need not, improve welfare and efficiency, depending on their exact configuration and on specific features of the economic environment. For example, it can be shown that unemployment benefits should be declining over the duration of an unemployment spell if workers have no assets and have to be induced to exercise search effort. But if workers’ search is simply characterized by acceptance or rejection (on a “reservation-wage” basis) of random wage offers, and it is possible for them to save and borrow, then benefits should be constant over time if utility has a specific representation (“constant absolute risk aversion”) and mildly increasing over time if risk aversion is more realistically inversely related to consumption levels.

#### **1.4 Mobility, hiring and firing**

Risk and insurance more generally interact with all forms of labour mobility, not only with those that entail unemployment. In reality, the productivity of any given worker varies over time, and is different across firms, geographical locations and occupations. Labour demand differences call for different employment levels, and labour demand shocks call for labour reallocation. If mobility were costless, workers should be allocated to employment opportunities so as to ensure equal productivities and wages across all jobs available for labour of a given quality.

If mobility is costly, however, the marginal productivity must be higher at firms whose high labour demand implies hiring, because only a positive spread between the two can offset mobility costs. If the costs of mobility are paid by workers, then wages should be such as to compensate them, hence higher at hiring firms than at declining firms. And if mobility costs are borne by uninsured workers rather than by the well-diversified representative agent of a perfect market economy, then the wage instability generated by costly arbitrage across employment opportunities has important implications for worker behaviour and worker welfare. To the extent that wage fluctuations bear on consumption levels (i.e. given imperfect insurance against labour income fluctuations), mobility towards good jobs of low-wage workers is financed out of relatively low consumption flows. Hence, its costs in utility terms are higher than they would be if labour income risk could be insured and pooled at the aggregate level (Bertola, 2004a). In *laissez faire*, future expected wage gains need to be larger when their decreasing marginal utility is smaller relative to that of the moving workers’ low consumption. The labour market delivers larger wage differentials by allocating less labour to currently more productive jobs or, equivalently, by reducing the intensity of labour mobility from low- to high-productivity jobs. Thus, lack of insurance harms not only the utility of risk-averse workers, but also the market’s productive efficiency. As fewer units of labour move from low-productivity

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towards high-productivity jobs, there tend to be fewer of the latter. Hence, aggregate production is low in an economy where risk-averse workers finance mobility. When mobility costs bear on individual workers' consumption, rather than on aggregate resources, decentralized decisions fail to maximize the latter.

Institutions influence the responsiveness of wages and employment to different and changing circumstances, and are therefore relevant to the welfare and productivity implications of imperfect insurance in the presence of labour mobility costs. Labour market dynamics are influenced not only by limited wage-setting flexibility, but also by regulatory constraints on hiring and firing, and in particular by employment protection legislation (EPL). In European countries, EPL typically requires that termination of individual regular employment contracts be motivated and subject to court appeal, and that collective dismissals be conditional on administrative procedures involving formal negotiations with workers' organizations and with local or national authorities.

Such provisions do have the intended effect of "protecting" jobs at times of declining labour demand, when firing costs smooth out job losses and reduce downward wage pressure. Just because such a situation is costly for employers, however, it is optimal for them to refrain from hiring in upturns, so as to reduce the desirability of labour shedding in downturns. Hence, EPL need not affect employment on average. In terms of simple demand-and-supply relationships, such as those illustrated in Figure 1, the marginal productivity of labour should be lower than the wage when employment is declining. Firing a marginal worker entails firing costs as well as wage-cost savings, but it should symmetrically be higher than the wage when employment is increasing, and the marginal worker's costs include expected future firing costs as well as the current wage. Thus, the implications of EPL are similar to those of labour taxes for expanding firms, and to those of employment subsidies for downsizing firms. If employment fluctuations are efficient in *laissez faire*, EPL obviously reduces production and profits. Unlike labour taxes, however, it does not do so by reducing employment on average, because its contrasting effects on employers' propensity to hire and fire reduce employment volatility but affect its average level ambiguously (Bentolila and Bertola, 1990). Since tighter EPL does reduce the propensity to hire in response to labour demand shocks, for a given intensity of such shocks it makes it more difficult for unemployed workers to re-enter employment: thus, it lengthens unemployment spells. In this respect its effects are similar to those of UI which, by reducing search intensity and increasing workers' reservation wages, also implies a slower exit rate from unemployment. EPL also influences job separation rates: as it makes it less likely that employed workers will lose their jobs, it concentrates unemployment on young labour market entrants.

Since EPL prevents reallocation of employed workers from less to more productive jobs, it reduces the overall efficiency of production. Hopenhayn and Rogerson (1993) emphasize this effect in an equilibrium model where EPL is represented by a tax on all separations (and, since the revenue of taxes is rebated to individuals, larger non-labour income reduces employment through labour supply). As firms hoard labour during cyclical downswings and restrain hiring during cyclical upswings, the average rate of profit is decreased and their volatility increased, relative to their unconstrained maximum value. Firms should of course attempt to reduce such volatility by any means available to them, for example by varying work-time when this is possible. If wage determination were left to market forces, their volatility would also increase, and institutional constraints on labour shedding by firms might well do little to reduce the volatility of individual labour incomes. In the extreme case where workers have no bargaining power, wages could respond to the labour demand shocks that EPL is meant to protect workers so strongly as to restore equality of wages and marginal productivity. Wage stability over time is then a natural complement to EPL, and results in cross-sectional wage compression when labour demand shocks occur at the level of sectors, regions, industries or firms, rather than at the aggregate level.

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## 1.5 Efficiency and policy interactions

It is obvious that labour market regulation would be ineffective if it could be offset by contractual interactions in perfect markets. For example, EPL provisions mandating severance pay would be ineffective if workers could sign binding contracts renouncing severance rights in advance of termination: making such contracts a condition of employment might well be in the individual interest, not only of employers, but also of unemployed workers who would otherwise not be hired, but they are naturally unenforceable in court in countries that treat protection from unfair dismissals as a fundamental, non-marketable right of workers. More interestingly, severance pay provisions could be offset in perfect markets by *ex-ante* payments, such as hiring bonuses paid by unemployed workers to reluctant employers, or indeed by lower wage rates (Lazear, 1990). As long as workers can borrow and lend and obtain insurance in perfect markets, in fact, the timing of labour income flows is immaterial, and market forces would naturally tend to preserve efficient *laissez faire* outcomes. In such conditions, enforcement of EPL might be possible if institutions also constrain other payment flows, for example, by also mandating minimum wages that make it impossible for workers to “pay” in advance for their own severance benefits. In such conditions, it would be harmful, since markets would be working perfectly in its absence.

Markets do not work perfectly, and policy need not be able to target their imperfections as effectively and precisely as would be desirable, because the ability of governments to interfere beneficially with imperfect labour market interactions depends on knowledge of relatively detailed features of those interactions, as discussed above. Still, markets and policies together determine the efficiency of labour markets. Despite their tendency to under-employ labour by allocating workers to unemployment or relatively unproductive jobs, UI and EPL may increase productive efficiency in the presence of distortions. UI, while decreasing search intensity per unit of time, can increase the overall amount of search when workers would inefficiently cut off search time in its absence. Similarly, EPL can induce employers to retrain workers rather than fire them, and this may increase labour productivity (net of retraining costs) when financial market imperfections would otherwise prevent workers from financing their own retraining. To the extent that EPL specifies payments to workers directly (rather than administrative procedures representing dead-weight costs from the point of view of employers and employees), it may facilitate reallocation of displaced workers who would be liquidity constrained in the absence of redundancy payments.

UI and EPL are broadly substitutable rather than complementary in these respects. In an important respect, however, UI and EPL are complementary: by reducing the intensity of labour market flows, EPL makes it harder to find a job for those who are unemployed. Thus, long-term unemployment benefits (or invalidity pensions and early-retirement provisions) are all the more appealing for workers when EPL is stringent. The possibility that UI and EPL may improve efficiency depends on imperfect market provision of reallocation-oriented and skill-improving investments.

Since laws may not be legally overridden by contractual provisions, EPL interferes with individual contractual freedom, just like minimum wages and administrative extension of collective agreements similarly interferes with individual wage-contracting freedom. Legislation often mandates administrative procedures, involving formal negotiations with workers’ organizations and with local or national authorities, when large employers wish to proceed to collective dismissals or plant closures. These and other aspects of labour law do aim at addressing informational problems and ascertain whether dismissals are “fair”: the letter of the law never prevents employers from firing incompetent or lazy workers. However, countries where EPL is stringent do require them to prove – through regrettably costly court procedures – that termination is justified, and administrative review of collective redundancies is generally aimed at ascertaining that

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employers have properly considered ways to perform internal adjustment, and encouraging them to compensate workers for the “social” costs of redundancies – costs that financial markets may fail to internalize properly to firms’ dynamic profit maximization problems. While it would be quite naive to expect government interventions to provide at no cost the same insurance that markets find it impossible to provide, it would also be naive to presume that properly designed policies cannot go some way towards resolving the relevant imperfections (Bertola, 2004a).

## 1.6 Activation and flexicurity

In general, poor *laissez faire* opportunities for financing workers’ retraining and relocation may depend on a variety of features of the economic environment. They may be addressed directly by policy instruments such as public training and job-matching facilities for the unemployed, i.e. “active labour market policies” (ALMPs). These policies combine forms of income support with “active” measures meant to ensure that labour is not idle (as it might under a pure UI scheme) or employed in low-productivity jobs (as EPL tends to imply), but is retrained and reallocated so as to ensure that it is used efficiently. Such schemes are clearly attractive if public agencies can fund them more efficiently than financial markets, again as a result of a superior information-processing and enforcement capacity. Creation of public jobs may also be beneficial if the government is better able than *laissez faire* markets to make use of labour services.

Policy can target such problems more or less directly, but different policies all bear on the extent to which labour can be “activated”, or moved from less productive (or almost completely unproductive, such as unemployment) to more productive allocations (Bertola, 2000b). The currently popular “flexicurity” concept can be usefully framed in terms of the basic tradeoff highlighted here between distributional concerns and production efficiency: of course, it is important to protect workers’ well-being from labor market shocks, as well as to ensure that their labour is flexibly allocated to the best possible use. The relative importance of the two objectives depends on underlying features of the economy, such as the extent to which financial markets may offer security to workers without policy intervention in the labour market, and the urgency of labour reallocation concerns in the face of more or less intense productivity and good market shocks. The ease with which the two objectives may both be achieved depends on details of policy implementation: active labour market policy and activation-oriented UI systems can certainly foster labour reallocation and increase employment, but administration of such programmes is not inexpensive. The Danish “flexicurity” approach yields high levels of employment and productivity at the same time as it affords stable consumption opportunities to workers, but it is doubtful that many countries could, like Denmark, spend some 5 per cent of GDP on labour market policies without encountering very serious tax collection and administration problems.

## 1.7 Training

To highlight how financial and other market imperfections bear on the desirability of labour market regulation, it is useful to consider how imperfect markets may be unable to achieve efficient outcomes as regards training and retraining of workers (Becker, 1964). In general, markets and contracts cannot provide appropriate levels of general training because it is difficult to make believable promises in two different respects. On the one hand, young workers, whose income and wealth may already be insufficient to fund desired consumption flows, cannot borrow easily in order to pay for their own training, because the financial market need not believe that such loans will be repaid. On the other hand, it is also difficult for workers to obtain training from their employers, because if training is at least partly “general” and therefore useful when employed by other firms,

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workers cannot be believed if they promise that, after their productivity is increased by training, they will be working at the current wage for the employer who trained them. There is of course also “specific” human capital, useful only when employed in a particular job. This can and should be financed by employers, since workers cannot appropriate returns to such investments (in the form of higher wages) by threatening to quit and work elsewhere.

Of course, general training could be financed directly by governments, as in the case of ALMPs. Aspects of labour market rigidity that constrain wage setting, however, can also foster training. When financial constraints prevent workers from investing in their own “general” human capital, i.e. skills that are useful in jobs other than their current one, allowing wages to be bargained by individual workers would make it impossible for firms as well to provide such training: as employers foresee that investing in workers’ skills would simply result in higher wages, as workers would otherwise quit, the benefits of training would only accrue to workers, not employers. As pointed out by Acemoglu and Pischke (1998, 1999), labour market imperfections or wage-setting constraints can offset such financial market imperfections. If workers cannot threaten to quit directly to other jobs because labour mobility is constrained by search costs or other frictions, or cannot negotiate their own wages because industry-level contracts are binding, individual firms will be able to provide training in generally useful skills without fear that other firms (and, in equilibrium, workers) will benefit from their training expenditure.

It has been argued that hiring and firing regulations promote long-lasting work relationships that encourage investment in human capital, over and beyond what could be achieved by *laissez faire* interactions and enforceable contracts (see, for example, Piore, 1986). While this is a conceptually appealing notion, it is not obvious that employment rigidity would have beneficial effects through this channel. Faster turnover makes investment in *specific* human capital less productive, hence the intuitive appeal of the link between labour market rigidity and human capital investment incentives. In an environment where contractual incompleteness prevents *general* training, however, EPL need not strengthen job attachment in a way that fosters training incentives. While it is true that EPL implies longer tenures, in fact, this need not lengthen the planning horizon for general training investments. EPL cannot force workers to remain with employers who have financed their general or specific training, so it is hard to see why such financing and training should be more intense if EPL is tightened in that realistic situation. EPL may only induce employers to retain workers they would otherwise fire, so training would indeed possibly increase with EPL if workers were, rather unrealistically, in a better position than their employers to finance specific training.

## 1.8 Financial market imperfections and social policies

As noted above, information problems can prevent efficiency of labour mobility between jobs and occupations, and UI (Acemoglu and Shimer, 1999) or EPL (Bertola, 2004a) can address efficiency and insurance issues when financial markets are realistically incomplete.

In these and other respects, labour market policies interact importantly with imperfections in other markets and with more general government policies. Financial market imperfections are particularly likely to be relevant, and their interaction with labour market regulation can be characterized in some generality recognizing that the poor availability of insurance and other financial instruments implies that the welfare of workers, unlike that of the “risk neutral” individuals of many dynamic labour market models, is higher when their labour income and consumption are stable over time. In a world of perfect and complete markets, workers could be indifferent to the timing of their earnings and “buy” access to jobs when EPL severance provisions discourage employers

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from hiring them, and consumption could be stabilized by “contingent contracts” in the face of labour income fluctuations.

But real-life financial markets are poorly equipped to deal with job-market risk, because an individual’s wage and employment depend importantly on luck (so that insurance would be welcome), but also on effort (which is hardly observable, bothersome, and unavoidably wanes if lack of effort simply increases the chance of receiving insurance payments, rather than that of having to reduce consumption). In reality, access to financial instruments and consumption-smoothing opportunities is clearly far from perfect, and takes a variety of forms. In pre-industrial societies, family-level and village-level interactions could take care of smoothing out idiosyncratic shocks within narrow, subsistence-oriented economic systems. In the large-scale economic systems of modern societies, either organized financial markets or state-organized redistribution schemes are called upon to smooth out consumption fluctuations across individuals. Redistributive labour income taxation has beneficial effects in the absence of insurance markets (Varian, 1980, and other references in Agell, 2002). Labour-income stabilization may be intuitively beneficial in the absence of the consumption smoothing afforded by credit and other financial markets: Hansen and Imrohoroglu’s (1992) numerical study, for example, indicates that UI can address the negative welfare implications of liquidity constraints, albeit imperfectly so if insurance engenders moral hazard in the labour market.

In practice, both markets and redistribution play a role in all developed economies, and both fail to insure individuals perfectly against bad luck, for neither could do so without eliminating incentives for individual effort in seeking more highly productive work opportunities. There are important differences across countries as regards formal and informal provision of consumption-smoothing instruments, and features of financial and labour markets are connected through a variety of mechanisms. At the most general level, as mentioned, imperfect financial market access can rationalize the low level of employment and large wage bill of configurations such as that illustrated in Figure 1. To support such outcomes, it must be the case not only that workers collectively can set labour costs at a level different from the competitive equilibrium one, but also that their objective function is different from that of a perfect market economy’s representative individuals (and disregards profits). Perfect capital and financial markets would support efficient production and maximization of a representative individual’s welfare, and lump-sum redistribution at a hypothetical pre-market stage could cleanly disentangle distributional and efficiency concerns. But if workers, as a group, do not have access to the financial markets where claims to employers’ profits are traded, they and their representatives may well favour outcomes that reduce non-labour income more than they increase labour income, as in the simple collective wage-setting or taxation example above.

If employers (as stockholders) have better access to financial markets than workers, then EPL may shift the costs of adjustment to employers, and reduce or eliminate the adverse consequences of job loss for uninsured workers (Bertola, 2004a). Also, when private financial and labour market contracts cannot shelter workers’ consumption from idiosyncratic labour demand shocks and ensure that labour reallocation takes place efficiently, collective interventions can try and achieve both goals. In the stylized framework outlined above, improvement on the *laissez faire* outcome entails taxing the payroll of high-productivity jobs, subsidizing that of low-productivity jobs, and reducing the workers’ cost of moving from the latter to the former. Intuitively, taxing high wage realizations with relatively low marginal utility and subsidizing the consumption of workers who earn low wages makes sense from an *ex ante* insurance point of view. Since equalization of take-home pay would remove workers’ incentives to move towards high-productivity jobs, a policy package meant to mimic a first-best allocation also needs to finance mobility out of aggregate resources, subsidizing mobility as needed to ensure that additional production is valued on the risk-neutral basis appropriate for idiosyncratic shocks.

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UI can similarly pool risks at the economy-wide level, or at least across employed and unemployed workers, depending on the details of its funding. The relevant financial market imperfections can rationalize schemes meant to buffer the consumption impacts of labour market shocks. The costs imposed on workers by job loss and by the subsequent mobility towards other jobs motivate both UI, which offer income subsidies to unemployed workers financed by payroll contributions, and EPL, which imposes costly procedures and/or redundancy payments upon individual and collective redundancies. Both institutions tend to reduce labour mobility across jobs: UI tends to increase reservation wages of unemployed workers, who are therefore less likely to obtain new employment; and EPL diminishes not only employers' incentives to fire redundant workers, but also their incentives to hire, since increasing employment in response to possibly temporary increases in labour demand increases the chance of encountering firing restrictions in the future. Both institutions also tend to reduce wage differentials, since the availability of unemployment subsidies limits competitive pressure on low wages, and EPL-induced redundancy payments can finance mobility towards new jobs, implying lower wage differentials in equilibrium between expanding and shrinking employment opportunities (Bertola, 2004a).

EPL can also induce deadweight costs in individual employment relationships when it mandates administrative or legal procedures, or severance taxes are paid to a central revenue pool. This looks wasteful but, just like the lower employment induced by collective bargaining in Figure 1, can be rationalized by workers' limited access to financial markets. Job "security" could hardly be valuable if perfect insurance were already available and, if suitable inter-temporal state-contingent contracts were available, then mandatory redundancy payments to dismissed workers could and should be offset by properly adjusting contractual payments. To the extent that lower turnover stabilizes workers' income and consumption at the expense of production efficiency, "wasteful" EPL can be beneficial to workers as a group if their share of a smaller welfare pie is sufficiently increased by distorted hiring-and-firing patterns and the resulting stability of labour incomes. Then, smaller wage differentials and easier mobility not only improve workers' welfare through a standard consumption-smoothing channel but also, by better aligning individual mobility incentives to aggregate rates of transformation, tend to improve productive efficiency as indexed by the proportion of high-productivity employment in the model. Thus, addressing this imperfection would be in the interest of employers as well as in that of workers.

Of course, not only financial but also labour markets are imperfect. Amable and Gatti (2004), Blanchard and Giavazzi (2003), Koeniger and Prat (2007), and others highlight theoretical and empirical relationships between labour and product market regulation. Product market regulation bears on the effects (and the desirability) of labour market regulation, because if product market competition is not intense due to entry restriction or regulatory constraints, then rents will be higher, and rent-seeking motives stronger on the part of unions and workers' political representatives, at the same time as monopolistic price setting keeps real wages low.



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## 2. Measuring institutions

The brief review of policy interactions in the previous section was focused on the trade-off between productive efficiency (brought about by high employment, especially at high-productivity employment opportunities) and *ex post* inequality (as may be generated by the inability of *laissez faire* markets to provide adequate insurance in the face of labour-market shocks). As noted above, however, policies and institutions may also be motivated by *ex ante* distributional goals, the pursuit of which typically entails efficiency losses in the realistic absence of lump-sum instruments. In particular, it is easier for organized labour to obtain a larger share of producer surplus not only when unemployment benefits provide a credible outside option in wage negotiations, but also when competitive wage underbidding is made difficult by minimum wages or by administrative extension of centrally negotiated wage rates. EPL *per se* need not affect average employment at given wages, nor need it increase workers' bargaining power in otherwise unconstrained wage-setting processes. In combination with wage-setting constraints, however, it may imply that workers who are employed (chiefly prime-age males) enjoy not only job security and wage stability, but also high wage rates.

This section discusses how empirical measures can serve as counterparts of the previous section's theoretical concepts. It reviews comparability problems across countries and over time of different measurement techniques, such as surveys of perceived regulatory stringency, reviews of legal norms, and case-based enforcement indicators.<sup>4</sup> Assessment of EPL stringency provides a good framework for discussion of more general measurement issues and, for this reason, will be treated first, and more extensively, in what follows.

### 2.1 EPA: Rules, surveys, court decisions

From the economic point of view, what matters is the cost of dismissals to employers, and whether the costs take the form of payments to workers (thereby influencing wage-setting) or of payments to third parties in the context of administrative and judicial procedures. Not only the size, but also the character of legal provisions regarding dismissal of redundant employees differs widely across European and American labour markets. In general, what is required is that job termination be motivated and that workers be given reasonable notice, or financial compensation in lieu of notice. In practice, enforcement of such laws is based on the workers' right to appeal against termination. Hence, employment reduction entails lengthy negotiations with workers' organizations and/or legal procedures.

Even in the relatively unregulated American labour market, experience-rated unemployment insurance contributions make it costly at the margin for firms to reduce employment (Card and Levine, 1994). The qualitative character of individual and collective dismissals regulation is similar, but more restrictive, in most European countries. Measuring how much more restrictive is not straightforward. Some aspects of job-security provisions, such as the number of months of notice required for individual and collective redundancies, are readily quantified; Grubb and Wells (1993) compile and discuss the relevant institutional information for a cross-section of industrial countries, and Lazear (1990), Addison and Grosso (1996), and others also consider such simple indicators' time-series behaviour. Also, rules regarding dismissal of individual employees can interfere with firms' decisions to adjust overall employment levels.

<sup>4</sup> See Nardo et al. (2005) for a discussion of indicator-construction methods for the general purpose of comparing conditions and performance across countries.

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Highly relevant aspects of job-security provisions, such as the willingness of labour courts to entertain appeals by fired workers and the interpretation placed by judges on the rather vague notion of “just cause” for termination, are more difficult to quantify precisely. While their variety and complexity makes it hard to measure precisely the stringency of firing constraints in each labour market, available indicators of job security provisions (such as the length of notice periods, the percentage of dismissals brought before labour courts, and the size of redundancy payments) are positively correlated with each other. This makes it possible to assess the relative stringency of job security constraints on a “ranks” basis, without taking a stand on the relative importance of the various aspects: if a country’s job security provisions are stronger than another’s provisions in all respects, we will know for sure that dismissals are more difficult in the former than in the latter. Early rank-based indicators were computed by Bertola (1990), and were based on highly (rank) correlated survey-based and objective measures of EPL stringency. The approach was refined by OECD researchers (see Grubb and Wells, 1993), and developed into the influential OECD indicators of regular-contract, secondary and overall employment rigidity indicators. It is important to keep in mind that rank-based indicators are not comparable over time: changes over time of a country’s EPL stringency need bear no relationship to the ranking of those provisions within a group of countries whose EPL provisions may well themselves be changing.

EPL can be measured at several different levels and with different instruments. It is possible to examine and classify legislative provisions (such as the mandated length of notice periods). Or one may assess the stringency of those provisions in practice, on the basis of observed outcomes. On the one hand, laws always allow dismissals on the basis of some conditions, and their stringency depends on how those conditions are assessed by the courts; on the other hand, the extent to which institutional constraints are binding for employers depends on the intensity of profit-maximizing employment fluctuations. Survey-based measures of EPL stringency have been constructed by Emerson (1988), and more recently by Di Tella and McCulloch (2005), on the basis of employers’ replies to questions regarding their perceptions of regulation as a burden on business operations. The resulting indicators are rather tightly related to employment stability patterns in the ways predicted by all-else-given theoretical relationships, and also prove to be related to unemployment and wage indicators. As gauges of the forces exerted by regulation on *laissez faire* economic interactions, however, survey-based indicators have to be treated with caution, because the perceived stringency of regulation also depends on economic conditions: employers may well be less inclined to complain about dismissal restrictions when a slowdown makes it highly desirable for them to reduce employment, for example, than in a cyclical upswing. In practice, Pierre and Scarpetta (2006) find that legal and perceived stringency indicators co-vary rather well across countries.

Measures of EPL implementation may also be constructed on the basis of court decision statistics (Bertola, Boeri and Cazes, 2000). Like all other indicators, these offer additional interesting information if combined with the relevant theoretical insights. Of course, courts do exercise judgement when implementing the law and, as always, their judgement is influenced by both economic and other considerations. Empirically, court decisions are influenced by local labour market conditions, as judges are more likely to decide in favour of worker reinstatement when and where unemployment is high in Italian data (Ichino, Polo and Rettore, 2003); but they also appear to depend on judges’ ideological bias in German data where political influences on judge appointments can be detected (Berger and Neugart, 2006). The influence of economic variables and labour market conditions is in fact not surprising in an incomplete-markets environment, where judges are supposed to try and implement efficient sharing and allocation on the basis of an assessment of the individual case’s circumstances rather than of contingencies completely stipulated by laws and contracts. Since the welfare implications of dismissal or reinstatement for a given risk-averse and uninsured worker clearly depend on job-finding probabilities, it is quite fair and unsurprising that otherwise similar cases may be decided

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differently in regions which differ in that respect. More generally, economic conditions do matter for the practical implications of nominally similar provisions: for example, there is empirical evidence that legal provisions meant to protect individual employees become more binding during cyclical downturns, when collective rather than individual dismissals are desirable for employers, in the unionized sectors of the American labour market (Donohue and Siegelman, 1995).

Evidence of ideological influences on court decisions, conversely, indicates once again that, not only market interactions, but also policy implementation are perhaps unavoidably imperfect, and the uncertainties and biases entailed by judicial processes lead many economists to favour their replacement with rule-based automatic severance payments.<sup>5</sup> The efficiency of court procedures, accordingly, depends in theory on the degree of financial market completeness, and on the ability of the judicial process to collect and process information efficiently about the parties' circumstances. The empirical relationship between legal and survey-based measures of EPL stringency should, in principle, be shaped by such features as the frequency and size of the demand and cost shocks determining employment fluctuations (and, when surveys refer to current conditions, they should also depend on the sign and size of such shocks received by individual firms), as well as by the intensity of politico-economic influences on judicial processes.

## 2.2 Wage setting

In different countries and different periods, different policies are implemented differently and more or less incisively (see the discussion in the next section), and can be interpreted in terms of distributional conflicts taking place under structural constraints, represented by the downward slope of the labour demand function. Not only rights of union organization and the ability to enforce collectively-agreed wages on all workers, but also the ability to use non-market instruments to redistribute the wage bill from high-wage employed workers to unemployed workers, matter for the desirability and feasibility of the low-employment outcome.

From the theoretical point of view, what matters is not only whether institutional constraints exist on the overall level and dispersion of wages alters *laissez faire*, but also how their character and motivation affects labour market outcomes. In practice, various aspects of union bargaining arrangements have different effects on aggregate and disaggregate wages and employment levels. As is the case along the other institutional dimension, construction and interpretation of wage-setting indicators should be focused on theoretical effects of interest.

Measures of union density (the percentage of employees who are union members) are easy to obtain, but need not be relevant to the union's power to set wages, which is affected very importantly by the "coverage" of collectively bargained wages, i.e. by extension of their effects to employees who are not union members. The coverage of employment by union contracts does not capture all theoretical channels of interest, however, because a given degree of coverage may result from a patchwork of sector- or firm-specific bargains, or by negotiations involving employers, workers and often governments at higher and possibly economy-wide levels. The extent to which the latter is the case can be assessed by indicators of "corporatism", "coordination" or "centralization", which are unavoidably rather subjective, but aim at capturing theoretically distinct

<sup>5</sup> See the discussion of "experience rating" and other ways of mimicking market mechanisms in Blanchard and Tirole (2003) and references therein.

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characteristics of wage bargaining systems. “Coordination” may offset the greater bargaining power associated with more extensive union coverage if negotiations occur at a level, and in a fashion, where the outcome can be properly shaped by the market-wide and macroeconomic implications of high and rigid wages: in the absence of coordination, strategic interactions between different firms, sectors or regions results in inferior employment outcomes (Calmfors and Driffill, 1988). “Centralization” per se has less favorable theoretical implications for the efficiency of labour allocation, as it tends to impose a degree wage uniformity – if only because contracts cannot be excessively detailed – across differently productive workers, firms or regions.

In the data, density and coverage are broadly positively correlated, with the United States and Japan featuring low levels and Scandinavian countries high levels of both. Some countries, notably France and Spain, have high coverage but low density. Since union enrolment data may be more relevant to financing of union activities than to the objectives and collective character of wage setting, coverage data are theoretically more relevant than density. Unionization indicators, of course, may in turn depend on deeper features of the economies, because unions (like other collective institutions) can usefully address market imperfections (Checchi and Lucifora, 2002). Unions may in fact be in a better position than governments to do so, as politico-economic interactions between organized interests may well be as seriously flawed as those mediated by markets between individual, fully selfish choices.

### **2.3 UI, taxes and activation**

Assessing taxation is also potentially difficult, in light of real-life’s tax code complications and, in particular, of the implications of progressive taxation and earned-income tax credits for the extensive (participation) and intensive (work-time, given participation) dimensions of labour supply decisions. In practice, the OECD computes and publishes tax-code-based estimates of taxation in the “average production worker” and some non-average income and family composition cases, in each country and each year: (UI replacement rates are also published on a “net” basis, taking into account whether benefits are taxable or not in different countries.) It is possible and may be appropriate to include in the wedge between the labour costs paid by employers and net wages accruing to workers not only income taxes, but also consumption taxes and mandatory social security contributions (as in the dataset used by Nickell, Nunziata and Ochel, 2005).

An important and difficult issue is that of assessing the extent to which social security systems link contributions to future benefits, such as pensions: if such a link were strong and actuarially fair, and financial markets functioned well, then individual workers’ labour supply decisions would count contributions as (deferred) pay, rather than taxes. Of course, the link between contributions and entitlements is not tight in most social security systems (and not surprisingly so because, as usual, complete neutrality of regulation would make it impossible to understand why it is imposed at all). But there is relevant variation across the welfare state “models” discussed in the next section, and some evidence that, in the cross-country dataset discussed here, it affects the relevance of contribution rates to supply decisions and employment outcomes (Disney, 2004).

As in the case of EPL, real-life UI systems are much more complicated than any tractable economic model as regards rules regarding waiting periods, eligibility, duration and determination of unemployment benefits. But, again, theory offers guidance as to how the crucial aspects of UI systems should be summarily measured in order to gauge their (positive) effects on consumption stability, and (negative, albeit unavoidable) effects on effort and re-employment. Theory can then inform interpretation of relationships between outcomes and available indexes, which typically refer the replacement rate at the beginning of an unemployment spell for a typical “average production worker” or other hypothetical

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unemployed persons, the average duration of benefits, or (so as to capture both level and duration aspects) the average replacement rate of all unemployed workers. The evidence broadly indicates that the duration, rather than the generosity of benefits, is associated with aggregate unemployment rates across countries, and this is consistent with the (also empirical) fact that most of the cross-country differences are observed in long-term unemployment, and with theoretical mechanisms whereby declining (or soon-expiring) benefits should elicit job-search effort.

While UI is classified as a “passive” policy, increasing awareness of its effects on search effort and propensity to accept jobs motivate reforms intended to reduce them. This would make it very important to assess the extent to which counseling requirements and conditionality rules offset those effects. This is far from easy to do on a cross-country comparable basis. More generally, indicators of Active Labour Market Policy (ALMP) would need (like all other institutional indicators) to be constructed and interpreted in terms of their theoretical impact (as well as of their costs), but cross-country comparisons may only be based on expenditure data (as available from the OECD Public Social Expenditure and from the EU ESSPROS datasets), which can hardly be a good gauge of efficacy and efficiency. Within-country assessments of the effects of the ALMP find that activation measures are often ineffective because they fail to target suitable individuals (see Kluge and Schmidt, 2002), even before accounting for their high fiscal costs (Martin and Grubb, 2001) which of course depend in turn on the structure of the relevant tax system.

## **2.4 Institutional co-variation and welfare state “models”**

Labour markets are never completely deregulated, and are regulated very differently across countries. In European countries, legislation meant to endow workers with some bargaining power and to insure them against health, unemployment and old-age hazards was introduced at times of actual or feared social unrest: in Bismarck’s industrializing Germany or in Lord Beveridge’s post-war United Kingdom. As discussed above, it can be efficient to try and provide insurance through mandatory government schemes when information and legal enforcement problems make it difficult for private markets to do so. But public schemes are not immune from such problems, and tend to reduce employment as, for example, recipients of unemployment subsidies reduce work effort.

Such efficiency losses are more easily affordable by richer societies, and Europe’s fast and stable post-war growth was unsurprisingly accompanied by development of increasingly extensive legislation and co-decision powers by unions. By the early 1970s, the institutional structure of labour markets was distinctively different, not only across the United States and Europe as a whole, but also across countries within Europe, where labour market policies play different roles in different welfare state models (Bertola et al., 2001). In Nordic countries, a tradition of full employment and universal welfare is based on generous unemployment benefits and a very important role for active labour market policies (including job creation in the public sector). The Bismarckian model of continental countries such as France and Germany features centralized wage determination and stringent EPL, and contributory pension, health and unemployment insurance programmes that, as mentioned, may – to the extent that they link benefits to contributions – not have strong labour supply and employment implications. The Beveridgian model of the United Kingdom and other Anglo-Saxon countries features social assistance safety financed by general taxation and comparatively light regulation of wage determination and employment relationships.

As stressed at the end of Section 1, labour market regulation interacts importantly with the structure of other markets. Measures of product market regulation have been recently constructed by Nicoletti, Scarpetta and Boylaud (2000), Conway and Nicoletti

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(2006), and others facing similar problems and adopting similar solutions to those discussed above as regards indicators of EPL and other labour market institutions. These and other indicators of regulation and social policy cluster across countries in sensible ways, both as regards the overall intensity of institutional interference in labour market outcomes, and substitutability of complementarities across different policy instruments.

For example, as discussed above, UI and EPL address similar problems, and are to some extent substitutable to each other. The American labour market features both loose EPL and stingy UI, perhaps reflecting availability of other wage- and consumption-smoothing instruments such as international and domestic labour mobility, and well-developed financial markets. Other Anglo-Saxon countries also cluster in low-UI, low-EPL configurations, while within continental Europe and Scandinavia, differences in the intensity of institutional interference are hard to gauge, because more generous UI and lower EPL (as in Scandinavian countries, where ALMPs are also an important feature of the institutional environment) would need to be compared with the less generous UI and much tighter EPL of Mediterranean countries (such as Italy and Spain). Such variation may be interpreted not as much in terms of differences in the intensity of the problems labour market regulation is meant to address, as in terms of differences in the ability of each country to administer different policy instruments meant to address those problems.

It is harder to detect patterns of change over time for country-specific institutions. In most European countries, job security provisions were tightened in the 1968-1974 period of union militancy. The timing of such reforms coincided with increasing unemployment but, of course, other simultaneous developments in, for example, the price of oil, union militancy, and fiscal and monetary policy make it difficult to formulate causal interpretations. Tentative steps towards labour market deregulation were taken by many of the same countries in the 1980s but, with the notable exception of the British labour market reform in the 1980s, dynamic developments were not such as to alter the relative rankings of labour market rigidity in European countries. More recently, especially since the mid 1990s, several countries have reduced rigidity of employment relationships, albeit mostly of temporary and nonstandard ones; and some, notably Denmark, have substantially reduced the generosity of their UI system. The character of actual and envisioned reforms can be interpreted in light of structural changes and policy-making constraints, as discussed in some detail in Section 4 below.

## 2.5 Non-OECD countries

The need for market-shaping institutions and their efficiency implications are both stronger in poorer countries. This makes their analysis more interesting and pressing, but also more difficult, because available information is less plentiful and precise in broader samples than that compiled and made available for industrialized countries by the OECD. The Heckman and Pagés (2004) study of Latin American labour laws is based on institutional information obtained from surveys of country officials, aggregated in an index aimed at summarizing in terms of wage labour costs the impact not only of social security and other tax/subsidy provisions, but also that of firing restrictions, on the basis of turnover rates in the United States. While this indicator is somewhat sparse and cannot assess properly EPL's impact on employment dynamics, when computed on a consistent basis for both OECD and Latin American countries, it does indicate that the latter tend to be more regulated. A similar impression is conveyed by the purely institutional indicators compiled by the World Bank's Rapid Response Unit, and by the several indicators of institutional interference with *laissez faire* documented and discussed in Botero et al. (2004) for a very large number of countries on the basis of surveys of businessmen and labour law experts. Another source of information on less-developed country labour regulation is Rama and Artecona (2002), which however does not attempt to document the actual but only the nominal legal stringency of regulation.

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As discussed by Bertola (2005), these statistics indicate that the quantity and wage dimensions of labour market “rigidity” are positively correlated across both OECD and Latin American countries, and not only among the former. This is consistent with the notion that both may be motivated by underlying country-specific economic and political concerns with imperfect (especially from the workers’ point of view) *laissez faire* outcomes. It is also interesting from this perspective to see that most Latin American countries are just about as heavily regulated as such OECD countries as Germany and Spain, and much less regulated than Anglo-Saxon countries, perhaps reflecting the different levels of financial market development of such groups of countries.



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### 3. Institutions and empirical outcomes

On the basis of the discussion in Section 1, institutions that remove some aspects of wage, work conditions and employment determination from the sphere of individual consensual decisions may conceivably benefit all market participants, or may at least benefit all or some workers at the expense of other groups. This section brings the resulting perspective to bear on a brief review of empirical relationships between country-level institutional indicators, such as those discussed in Section 2, and labour market outcomes.

As markets continue to react to constraints and give individual incentives to work around rules, it is interesting to assess the relationship between labour market institutions not only with unemployment, inequality, productivity, and other intended and side effects, but also with the incidence of informal employment relationships, self-employment, overtime and other market reactions to constraints<sup>6</sup>

#### 3.1 Interpreting cross-country evidence

It should be made clear at the outset that empirical analysis of the relationship between observed institutions and their labour-market effects is far from straightforward when, as argued above, institutions are at least partly chosen taking into account the desirability of their effects and their interactions with other institutions and structural features.

In theory, for example, it is clearly the case in theory that taxes reduce labour supply and demand and, all else equal, higher taxes should be associated with lower employment (Prescott, 2004). But that is not what should be observed across countries and periods, both because all else is not equal in reality, and because governments do not tax labour in order to reduce employment. They use the revenue of taxes for a variety of different purposes, some of which have a positive impact on employment. The impact of taxes on labour demand and supply differs according to structural features, including the ease with which production may move across national borders in reaction to taxation.

In this and other cases, a causal interpretation of simple correlations can be very misleading. For example, a negative cross-country correlation between EPL and employment rates is fully accounted for by low female employment-population ratios in Southern Europe (Nickell, 1997), while EPL is positively correlated with prime-age male employment rates. This may – but need not – imply that tighter EPL would decrease female employment in northern European countries, because that and other phenomena can very well be rooted in social conventions and underlying cultural differences. But while a causal interpretation is unwarranted, such empirical findings do have interesting theoretical interpretations and policy implications. At least part of the observed lower female employment may indeed be due to tighter EPL. As discussed in Section 1, dismissal restrictions reduce employers' propensities both to hire and terminate workers, with ambiguous implications for overall employment; but the effect on hiring may be more pronounced in the case of women and other workers, who may quit and re-enter the labour market for personal reasons. This implies that women may well be under-represented in the employed pool of workers when EPL is tighter, while mature male workers (who had time to find their jobs and are unlikely to leave the labour force) should be

<sup>6</sup> For an introduction and recent detailed studies, see Cahuc and Koeniger (2007) and the references therein.

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overrepresented.<sup>7</sup> And if the underlying cultural tendency to employ women differs across countries, this mechanism can in fact explain differences in the chosen tightness of EPL: if (for whatever economic or non-economic reasons) a country's women are not inclined to market employment, it will be particularly important to guarantee high-wage and stable employment to male breadwinners.

When both policies and outcomes can jointly respond to underlying cultural differences, of course, it is difficult to obtain reliable estimates of structural relationships between institutions and outcomes (Baker et al., 2005; Rodrik, 2005). Some *ceteris paribus* implications of union activity, taxation and other institutional features can be detected in cross-country samples by appropriate controlled regression specifications, especially when time-series variation in institutions can be exploited (thereby keeping fixed country-specific unobservable factors), and attention is paid to interaction effects (Bassanini and Duval, 2006). It is insightful to consider disaggregated evidence, to the extent that spurious country-specific influences can be eliminated by looking at the implications of institutional interferences for within-country differences in labour market outcomes. Institutions may alter the demographic composition of employment, to the extent that unemployed and out-of-labour-force status are concentrated at the beginning and at the end of individual working careers, as well as in the female segment of the potential labour force. If such effects are independent of country-specific unobservable characteristics, they may be estimated with some confidence on country-level panel data (Bertola, Blau and Kahn, 2007).

### 3.2 Unemployment and wage dynamics

Bearing in mind such qualifications, the vast literature analysing cross-country and dynamic patterns in the relationship between labour market institutions and outcomes does uncover theoretically sensible and policy-relevant patterns, in particular as regards the contrast between the United States (and other Anglo-Saxon countries) on the one hand, and European (especially continental European) countries on the other hand. The experiences of these two groups of OECD member countries have largely mirrored each other over the last few decades. If in the 1960s, and until most of the 1970s, the unemployment rate of typical European countries was much smaller than its American counterpart, by the late 1980s a virtually uninterrupted trend increase brought European unemployment rates to exceed North American ones by a large multiple (Bertola, Blau and Kahn, 2002). The literature seeking explanations for this “reversal of fortune” phenomenon has focused primarily on such labour market institutions as union coverage and representation rights, EPL and unemployment insurance benefits (Nickell and Layard, 1999; Nickell, Nunziata, Ochel and Quintini, 2003). Even though relief from the need to work should in general reduce employment, until the 1970s, and even in the aftermath of the period of worker unrest in the late 1960s, increasingly generous pro-worker institutions coexisted in Europe with low unemployment rates; much lower, in fact, than in the comparatively unregulated United States. The first oil shock and the following decades of slower growth saw the inception and persistence of high unemployment in most European countries, and increasing attention to the effect of institutions on labour market performance.

The prevalence of long-term, collectively bargained contracts can explain why unemployment began to increase, more or less sharply, when oil shocks and other macroeconomic developments in the 1970s reduced the amount of labour demanded at any

<sup>7</sup> This theoretical implication is consistent with the empirical results of Bertola, Blau and Kahn (2007) on cross-country panel data. The relative-employment regression on Chilean samples (Montenegro and Pagés, 2004), controlling for time effects, finds that increases in EPL affect unemployment inflows of youth and women less than those of mature men.

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given wage. If wages are pre-set, shocks can cause employment and unemployment fluctuations, the size and persistence of which depends on the extent of *ex post* wage flexibility and on the character of wage bargaining. Nominal shocks are a more relevant source of real wage misalignments and unemployment in labour markets with more pervasive and longer-term collective wage contracts. Conversely, real wages react more promptly to productivity shocks or growth slowdowns if bargaining parties are in a better position to take into account their employment implications.

By taking into account the repercussion of higher wages on aggregate unemployment, a centralized bargaining process should result in better employment outcomes (Calmfors and Driffill, 1988). At the empirical level, however, the theoretically appealing notion of “centralized” bargaining is difficult to measure so precisely as to obtain reliable statistical results. Soskice (1990) objects to the Calmfors and Driffill classification of labour market institutions in various countries, and finds much less support for the basic theoretical insight in empirical work that classifies bargaining as decentralized in the Japanese and Swiss labour markets, but centralized in the Dutch and German markets, and acknowledges the changing pattern of wage determination in the British labour market. From a more substantive point of view, increasing integration of goods and products markets (discussed below) makes it difficult even in theory to define relevant measures of centralization or “corporatism”; while nationwide coordination may ease adjustment to largely aggregate shocks (such as the oil shocks of the 1970s), recent developments may call for more flexible wage and employment responses across sectors.

To the extent that reactions to country-wide shocks are quicker (and the unemployment consequences of such shocks less severe) when wage bargaining is more centralized and better coordinated across industries, the more or less “coordinated” character of wage negotiations can explain the different depth and persistence of unemployment crises in Europe. On average, unemployment in Europe fluctuated around a natural level that, after having risen sharply until the early 1980s, has remained essentially flat for some 20 years (Blanchard, 2006) and has only recently perhaps begun to decline. Over the 1970s and 1980s, wage growth was much slower in the United States than in such European countries as Germany and Italy, mirroring unemployment dynamics in a way reminiscent of Figure 1’s simple employment-wage tradeoff along a downward-sloping labour demand schedule. Across countries, however, there is only a slight association between unionization indicators and unemployment levels. A much stronger association is evident between wage-setting centralization and measures of earnings dispersion across workers, whose empirical implications are discussed next.

### **3.3 Wage inequality and labour income stability**

A variety of underlying characteristics of institutions, and not only workers, are empirically relevant to the extent of wage dispersion (Blau and Kahn, 1996, 1999). While centralized bargaining may be better able to coordinate reactions to aggregate shocks, it tends to result in less detailed, more homogenous wage structures across firms, sectors, regions, individuals. Not only centrally bargained wage schedules (with administrative extension at the sector, region, or even national level), but also statutory minimum wages, tend to compress the wage distribution. Wage compression is also a natural by-product of UI: as workers have small incentives to accept low-wage employment when generous unemployment benefits are available to them, the low end of *laissez faire* wage rates is truncated by high reservation wages. When individual wage bargaining is constrained by such institutional features, workers located in low-demand segments of the labour market may not obtain employment by accepting low-wage offers (and bidding down the wage of their employed counterparts).

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Empirically, centralized wage setting, and the wage floors implied by legal minima and/or benefit entitlements, tend to compress wages across heterogeneous workers and can lead to divergence of employment outcomes; for example, across demographic groups (Kahn, 2000), and across regions in Italy, Germany or Spain, where the uniformity of centrally bargained wages (and of other national institutions) tends to lower employment where labour is less productive. A detailed analysis of the influence of country-level labour market institutions on within-country wage dispersion is in Koeniger, Leonardi and Nunziata (2007). The relationship between labour market institutions and more general measures of inequality, that also account for the incidence of non-employment and for capital income, is studied by Checchi and Garcia Peñalosa (2005) for industrialized countries, where they appear to have an intuitive inequality-reducing role; and by Calderòn, Chong and Valdes (2003) for a broader sample of 121 countries, including many developing countries, where employment and industrial relation regulation is similarly associated with lower inequality (while purely legal measures of regulation, such as adoption of ILO Conventions, are not associated with inequality).

Interestingly, and not surprisingly, relative wage variation appears to be heavily constrained in the same countries where EPL is most stringent (Bertola and Rogerson, 1996). Of course, the positive or negative effects of wage and quantity rigidities tend to reinforce each other; quantitative firing restrictions could hardly be binding if, in the face of negative labour demand shocks, wages could fall so as to make stable employment profitable, or to induce voluntary quits. Across countries, the combination of wage and quantity rigidities indeed appears to protect employed workers from labour income volatility, as individuals enjoy more stable wages and longer tenure lengths.

### 3.4 Employment protection

Theory does not predict a strong association between employment levels and EPL. In the face of fluctuations in labour demand, EPL reduces the propensity of employers to increase employment as well as their ability to reduce it, with small and ambiguous effects on employment's average along hiring and firing cycles. Empirically, there is no convincing evidence of any relationship between EPL and employment or unemployment levels. As discussed in more detail below, correlations have to be treated with caution in this context, but more stringent EPL is associated with more stable aggregate employment paths and with longer unemployment durations within the pool of unemployed workers (Bertola, 1999). There is instead evidence that EPL reduces the responsiveness of employment to labour demand and wage shocks, increases the length of unemployment spells, and affects the demographic composition of employment and unemployment as it should in theory, since it reduces job finding rates for young job market entrants and female workers with intermittent labour force participation at the same time as it reduces job-loss rates for mature workers. As it reduces both job destruction and job creation rates, however, EPL should not have first-order effects on overall employment. The evidence from regressions that control for other more relevant influences tend to confirm this (see Bassanini and Duval, 2006, and its references).

To the extent that institutional factors shape wage and employment outcomes (see the next section for important qualifications to this evidence), "rigid" labour market configurations appear quite effective in sheltering workers from idiosyncratic labour-income fluctuations. The OECD index of EPL stringency is not surprisingly strongly associated with average tenure lengths (Bertola, 1999). Rank-based measures are only qualitative, i.e. they do not assign a quantitative meaning to the difference between different countries' indices. They are therefore useful in order to test predictions of theory that are similarly qualitative, such as that stronger job security should be associated with more stable employment: to this end one may, for example, relate EPL indices to the rank-

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order of the employment variances of different countries (Young, 2003, offers a detailed review of recent evidence in these and other aspects).

EPL is also positively associated with wage stability indicators, across the few countries where time-series stability indicators are available. In heavily regulated labour markets, workers who are employed tend to remain employed, and their wages tend to remain stable over time. Stability of labour income for such workers is valuable in protecting their (and their families') consumption from welfare-reducing fluctuations. In the absence of suitable smoothing instruments, heterogeneous welfare losses from labour demand instability may rationalize frequently expressed concerns with increasing wage inequality and labour market insecurity in the United States, the United Kingdom and other relatively unregulated labour markets. As in Benabou and Ok (2001), more inequality can be associated with higher welfare for risk-averse individuals if mobility is intense, and the transition probabilities to higher and lower income (and consumption) levels are non-linear so as to give poor individuals good "prospects of upwards mobility". This condition is almost satisfied in American data, where individuals need not resent inequality very much. In other OECD countries, however, prospects of upward mobility for workers appear much more limited, and even when currently poor workers may look forward to higher future income, financial markets tend to prevent consumption smoothing.

While labour reallocation across jobs is only mildly related to the stringency of EPL in OECD countries, flows between employment and unemployment are much smaller in high-EPL economies (see Blanchard and Portugal, 2001, for evidence and references). In the same economies that provide equal and stable incomes to employed workers, in fact, other institutions (like collective bargaining) tend to increase average wages and to make low-productivity workers difficult to employ, and to generate a large and stagnant stock of unemployed workers. The data do give indications of meaningful trade-offs between employment rates and wage equalization. Higher wage inequality is significantly associated with higher employment rates, after controlling for country effects (which may capture institutional and structural features that change only slowly over time, if at all, within each country) and time effects (which may offer a stylized summary measure of the common technological or trade-related forces that tended over the 1970-2000 period to increase the differentiation and turbulence of labour demand in industrialized countries).<sup>8</sup>

From the simple theoretical perspective outlined above, it is not surprising to see that wages are compressed in the same markets where EPL is most stringent. Quantitative firing restrictions, in fact, could hardly be binding if wage fluctuations were completely unrestrained: in response to the labour demand shocks that EPL are meant to protect workers against, wages could fall so as to make stable employment profitable, or to induce voluntary quits. Hence, limiting the freedom offered to employers and workers in setting wages gives force to quantity constraints. Moreover, to the extent that redundancy payments reduce workers' mobility costs, and are larger when they are mandated by legislation than when they are left to imperfect private contracts, it is not surprising in light of workers' mobility incentives to find that more stringent EPL is associated with smaller equilibrium wage differentials. To the extent that job security provisions explicitly require, or implicitly encourage, payments from the firing firm to departing employees, more stringent EPL implies that mobility costs are at least partly borne by firms, rather than by workers, and should be associated with smaller wage differentials in situations where voluntary mobility across jobs is observed.

<sup>8</sup> Bertola, Blau and Kahn (2002) and Bertola (2004b) offer a more detailed discussion of such phenomena, and of the role of labour market institutions in mediating the impact of structural shocks on wage and employment patterns.

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Indicators of the intensity of labour reallocation across firms are only mildly related to EPL rigidity indicators, and this negative evidence has been the subject of extensive investigation (see Bertola, 1999, for a discussion and references). The data are of course very noisy, and this may explain the insignificant relationship between the two variables, but the evidence does not readily support a simple view of EPL as a rigidity factor, and may perhaps be taken to indicate that, in terms of the simple framework above, payments to redundant workers do foster financing of mobility by financially constrained workers.

More generally, it is appropriate to try and validate aggregate indices of these and other labour market features by examining the extent to which their various components co-vary across the observation sample. The weighting of components of an overall index is crucial when institutional features do not co-vary strongly: for example, should regular employment rules be more stringent in countries where temporary employment is more loosely regulated, then choosing the relative weight of the two components matters directly for the assessment of country-level overall rigidity. Since various aspects of “rigidity” are uniformly more stringent or less stringent across pairs of countries, however, their weighting in the construction of an aggregate index will determine the quantitative assessment of rigidity (which also depends on functional forms in other ways), not the ranking of countries in that respect.

### **3.5 Financial market imperfections**

In reality, workers’ consumption and their mobility investments can indeed be financed not only by contingent financial securities, but also by self-insurance through savings, and by private labour contracts with employer-financed training and/or redundancy pay provisions. Still, all such instruments fall short of implementing the smooth consumption paths and efficiency-based reallocation and retraining decisions that would characterize a labour market with perfect financial market access. From the economic point of view, wage variations are relevant to welfare only to the extent that they are reflected in consumption. Empirically, earnings and consumption tend to track each other quite closely at the individual level, especially at the low end of their distributions, where poor individuals find it difficult to offset labour income fluctuations by saving and otherwise accessing the financial market (Attanasio and Davis, 1996; Cutler and Katz, 1991 and 1992; Blundell and Preston, 1998).

Data and information are scarce on the financial market access of households (as opposed to firms). Bertola and Koeniger (2007) show that less-developed consumer credit (as may be determined by countries’ historically determined judicial efficiency) makes stable labour incomes more attractive from a welfare-theoretic point of view. To the extent that wage inequality and instability are determined by market institutions, rather than by workers’ heterogeneous productivity and the intensity of dynamic shocks, it is not surprising to find that it is low in countries with tight borrowing constraints.

### **3.6 Training**

Pierre and Scarpetta (2007) focus on interactions between EPL and training, pointing out that employers may find training more appealing when firing and re-hiring is costly or difficult, at least if wages are also inflexible (so as to prevent workers from appropriating the general component of training returns: Acemoglu and Pischke, 1998). Pierre and Scarpetta find in cross-sectional data that firms operating in more rigid markets (as measured by survey perceptions or legislative assessment) do report more training activity. As repeatedly argued above, it is insightful to broaden the analysis to other aspects, and take potential market imperfections into account.

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Across countries, tighter EPL is associated with less employer-provided training (Bassanini et al., 2007). The same countries where EPL is stringent also tend to feature poorly developed household-finance markets (Bertola and Koeniger, 2007). This is not surprising if scarce opportunities to smooth consumption in the face of labour income fluctuations make it desirable to avoid such fluctuations. Bertola (2007) shows that the Jappelli and Pagano (1994) index of household borrowing conditions is tightly correlated with the OECD index of training participation analyzed by Bassanini et al., and argues that this simple correlation is consistent with the standard theoretical considerations outlined in Section 2. If workers are liquidity constrained, then they cannot easily finance their (general) training, not even by accepting lower wages (and compressing their consumption) in exchange for employer-provided training. This establishes a direct channel for financial market imperfections to bear on training opportunities and outcomes. The empirical correlation between EPL and training can be, from this perspective, a spurious effect of correlation between EPL and borrowing conditions, both of which may help workers achieve a desirably smooth consumption path. After controlling for the borrowing conditions indicator, in fact, there is no relationship between EPL and training. Hence, there may be no need to invoke elaborate theories of why regulating dismissals might encourage employers to fund their employees' training.

Similar structural and institutional channels of interaction may be relevant to the empirical relationship between the correlation between the incidence of temporary employment and EPL (Pierre and Scarpetta, 2007, and their references), and that of training. Individuals with insecure jobs naturally find it difficult to access the credit market and, to the extent that general training must be financed by their own current consumption, will unsurprisingly be trained less than would be implied by efficient forward-looking investment decisions.



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## 4. Dynamics and reforms

The empirical approaches and results reviewed above treat institutions as factors shaping labour market outcomes, and assess their implications on the basis of *ceteris paribus* assumptions regarding economic structures and shock intensities. The idea that countries feature different labour market institutions, but otherwise similar economic structure and shocks, may be appropriate in the OECD context, where institutional configurations may, to a large extent, be historically determined and all countries experienced broadly similar fiscal/monetary policy and energy cost shocks. “Shock” indicators of the type considered by Blanchard and Wolfers (2000) are indeed similar in size and character across OECD countries, to the extent that interactions between institutional indicators and simple time effects explain a large portion of observed unemployment patterns. The limited extent of dynamic variation in the institutional layout of labor markets makes it difficult to empirically disentangle their effects while accounting for country-specific characteristics.

As discussed in Section 3, the relationship between regulatory indicators and outcomes of interest should be interpreted in light of other country-specific characteristics (which also play the role of confounding factors when assessing the impact of institutions on labour market outcomes). However, analysis of reform tensions resulting from the dynamics of structural change cannot be based very solidly on empirical analysis of actual reforms and other forms of institutional variation over time, as much less progress has been made in exploring the deeper determinants of those institutional differences.

Institutional intervention in the labour market certainly entails costly information collection and performance monitoring and/or deadweight inefficiencies, at the same time as it may well improve the efficiency of market allocations in an imperfect world. As repeatedly mentioned, not only markets, but also collective policies, find it difficult to implement appropriate state-contingent transfers both to improve workers’ welfare and increase aggregate production (and profits). The relative merits of different policies vis-à-vis markets depend on structural features. A society that can process information more efficiently at the aggregate level than in market interactions would be predicted to feature more pervasive policy interventions of the active type, based on tax-and-subsidy packages and/or direct management of labour reallocation costs. Societies with limited administration capabilities might tend to privilege simpler regulatory policies instead and, as in the case of EPL, task employers (presumably better-informed and better-insured than their employees) with avoiding or financing labour reallocation.

In general, one would expect to see more limited policy interference in economies where it causes small beneficial effects and large deadweight losses; for example, because a very elastic structure of economic interactions gives ample scope for individuals to escape regulation and taxation. Importantly, however, the welfare effects of policy are not the same for workers who cannot shelter their consumption from income fluctuations, and for individuals who can access perfect financial markets instead. Workers, like the whole economy, benefit from allocation of more labour to high-productivity jobs. Mobility *per se*, however, does not improve workers’ welfare, which is only a function of the overall level and stability of wages. An efficient allocation of labour increases profits, but does not benefit uninsured workers when it is achieved by making wages more flexible (and consumption more volatile). Hence, workers and other agents differ in their appreciation of any given policy's impact on productive efficiency.

In broader samples, including less developed countries, it is even more important to take into account that different countries face different problems, and may therefore choose different institutions. This makes relationships between institutions and outcomes hard to interpret, for the reasons explained in Rodrik (2005): in the context of the present paper’s

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subject matter, for example, an institutional feature may be empirically associated with high unemployment, not because it tends to increase unemployment, but because it tends to reduce it; is therefore more widely adopted in countries where unemployment is a more serious problem; and is not as effective as to bring unemployment back to the levels of luckier countries. To account for such possible interactions between policies, outcomes and underlying structural features in different countries and periods, it is important to try and consider relevant information about the economic and social structure of countries. Such information is unfortunately far from adequate to that purpose in practice, both because the potentially relevant cross-country differences are much more numerous than countries, and also because many obviously relevant characteristics are not observable, or are not measured in comparable ways. Heckman and Pagés (2004) provide interesting analyses of individual Latin American countries and comparisons of samples of Latin American and OECD countries. They make it clear that comparisons across diverse countries are useful, but difficult, and not easily conducive to sharp insights. When the structure of the problems facing the countries (and markets and individuals within countries) is very heterogeneous in the sample considered, in fact, it is necessary in principle and hard in practice to disentangle the implications of structural characteristics from those of institutions and policies.

But the perspective resulting from efforts in that direction can still offer interesting, if relatively informal, and particularly useful insights. As both the redistributive political appeal and the efficiency costs of labour market regulation are enhanced by Latin America's inequality and instability, much more dramatic reforms may occur there than in OECD countries. From this perspective, Latin American countries offer a rich set of reform experiences: several have pioneered the use of notional benefit accounts, which may indeed target the financial market failures emphasized above as possible rationales for observed collective interference with labour market outcomes. If the rate of return on notional benefit accounts suitably reflects that of investment opportunities that are available at the aggregate economy's level, but not to individual workers, they can for example ease liquidity-constraint problems, at least if withdrawals are allowed in the relevant contingencies. The dramatic variability of macroeconomic and institutional dynamics in most Latin American countries offers welcome empirical opportunities to gain further insights into theoretical mechanisms. But the equally dramatic heterogeneity of personal circumstances in less developed countries makes it important to take into account the intended benefits of institutional interference with the workings of labour markets when discussing their actual shortcomings.

## 4.1 Structural change

Institutions that originally served a useful purpose in an imperfect world should be reformed when the world changes (Bertola, 2004b). Structural change can magnify the unemployment and employment effects of institutions meant to redistribute income and remedy financial market imperfection, or can make them redundant (for example, because financial market development makes labour income fluctuations less problematic).

Available institutional indicators may or may not be as directly relevant to theoretical interactions as might be desirable, and their quality is particularly dubious along the time dimension that would be relevant to assess their impact in each (heterogeneous) country, and to study reform processes. A variety of alternative, not fully comparable data sources are of course available. For example, Bertola and Boeri (2002) use the FRDB database of reforms to assess the intensity and direction of reforms in more recent times. The resulting picture is one where reforms implemented are many, but typically marginal, often conflicting in character. Changes of institutions are hard to interpret, and their impact is hard to measure, since they are meant to shape forward-looking decisions along possibly generation-length spans of time. Much relevant, and also hard-to-interpret, information is

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contained in policy discussions before reforms are (or are not) implemented. It would be interesting to try and analyse reform pressures on labour market institutions on the basis of indicators of expectations (or discussions) of institutional changes, since expectations of reforms should play an important role in any dynamic environment.

A broad message of the data, however, is that while institutions vary widely across countries, they are much more stable than unemployment, wage inequality and other labour market outcome variables. As discussed above, unchanging institutions can shape an economy's reaction to aggregate shocks. More generally, the same dynamic developments can produce very different employment and wage outcomes in countries with different (albeit stable) institutions. This can explain why, in the 1970s and 1980s, countries with more extensively regulated labour markets experienced more pronounced unemployment increases in the aftermath of similar productivity, inflation and wage shocks (Blanchard and Wolfers, 2000). Empirically, in fact, the forces that interact with labour market institutions in driving dynamic trajectories can be almost equally well represented by period-specific dummy variables rather than by observable macroeconomic variables, which tend to behave rather similarly over time across industrialized countries.

The evidence can be consistent with a role for common structural change trends rather than for country-specific shocks. The relationship between country-specific labour market institutions and unemployment and wage dispersion dynamics, for example, can be interpreted in the light of skill-biased technological progress trends, or of increasing opportunities for advanced countries to import unskilled-labour-intensive goods and export skill-intensive ones. Over the last three decades of the twentieth century, unemployment displayed a trend increase in continental European countries, but remained trendless in the United States and other Anglo-Saxon countries, while earnings inequality remained stable (or even declined) in the former group of countries, but trended upward in the latter (Förster and Pearson, 2002; Bertola, 2004c).<sup>9</sup> If technological progress or international trade increase *laissez faire* wage inequality (Juhn, Murphy and Pierce, 1993), they also increase the relevance of wage floors: if low wages cannot decline in European countries, employment of unskilled workers must decline (Krugman, 1994). Similar insights into the changing implications of unchanging institutions can be drawn considering other structural aspects. More intense product market competition, as implied by Europe's economic integration process and by more general globalization trends, increases the elasticity of labour demand. In the context of the motivating example discussed in Section 1, a flatter labour demand function implies larger employment losses from any given tax or wage floor.

In more complex dynamic models, if reallocation towards higher-paying jobs is costly, then institutions that tend to prevent wage inequality and restrict mobility have sharper implications for employment and unemployment when more volatile shocks affect labour demand (Bertola and Ichino, 1995; Ljungqvist and Sargent, 1998). In the presence of ongoing labour demand shocks over the lifecycle of individual jobs and of financial market imperfections, labour market rigidities can have the beneficial effects that originally motivated their introduction. However, they also tend to prevent accommodation of one-time adjustment pressure. The increasing relevance of flexibility concerns may explain why policy frameworks introduced in the 1990s, such as those recommended by the OECD Jobs Study and by the European Union's Lisbon Strategy, de-emphasize income support for job seekers and job losers in favour of job creation spurred by wage and employment flexibility, and the role of training and other active labour market policies aimed at bringing workers' productivity in line with wage aspirations. A labour market

<sup>9</sup> Where data allow measurement of earnings instability, unemployment appears to grow along with wage dispersion. See, for example, Gottschalk and Moffitt (1994).

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where employment relationships and wage-setting are both heavily regulated may or may not feature lower inter-firm labour mobility (Bertola and Rogerson, 1996), and may or may not generate long-term unemployment, depending on the level and responsiveness of aggregate wages. Regulation certainly reduces productive efficiency and returns to capital when it removes incentives to relocate labour. These effects are particularly relevant when economic integration calls for one-time adjustment at the same time as, by removing obstacles to trade and factor mobility, it makes it more important for each country to achieve high productivity, and “competitiveness”.

Flexibility-oriented reforms are at least partly motivated by such considerations, as well as by better empirical understanding of the effects of labour market institutions. While it is, in principle, obvious that institutional interference can be responsible for high unemployment and low employment, just because such effects depend on potentially heterogeneous structural parameters, it is hard to assess their impact in data where many relevant confounding factors cannot be controlled. As the time dimension of available data increases, however, it will be increasingly important when interpreting time-series evidence to focus on the economics and politics of reform processes rather than of institutions at each point in time (Saint Paul, 2000), and to be aware of plausible determinants of institutions. Shocks or structural change, by making job loss more or less likely or painful, may motivate changes in the generosity of unemployment insurance or in the stringency of EPL: the correlation between such institutions and employment performances will be largely spurious, for the reasons outlined by, for example, Rodrik (2005). The wide and changing variety of labour market policies across countries offers opportunities to try and disentangle their effects in increasingly available disaggregated data, at the same time as it makes it necessary to take into account the many important and related respects, besides labour market structure, in which countries differ.

## 4.2 The international dimension

As the more intense competition from across each country’s borders enhances the desirability of labour income protection at the same time as it increases the employment costs of the relevant policy instruments, policy reforms may well be motivated by different perceptions and different political processes in different countries. The internationalization of economic relationships, however, naturally tends to favour deregulation. If labour market regulation is meant to remedy market imperfections, it has to be agreed and enforced collectively at the same level where market interactions occur. There is of course a danger that uncoordinated implementation by independent policy-making authorities in integrated (and still imperfect) markets may ultimately find it impossible to implement beneficial rules.

To foster efficiency, collective decisions must take all of their consequences into account, and generally need to be accompanied by compensatory transfer policies. These conditions are much more nearly fulfilled within national systems than in the context of international economic interactions. The nature of policy failures resulting from improper “systems competition” (Sinn, 2003) is similar to the mechanism underlying undesirable outcomes of *laissez faire* interactions among individual economic agents. Just like imperfect factor and good markets can fail to appropriately balance the objectives of economic agents with conflicting objectives, so political interactions between collective decision-makers whose objectives differ can result in undesirable policy configurations. Conflicts of interests between policy-making entities may lead to attempts to undo the effects of policies implemented at higher or lower levels. The resulting situation can easily be worse than *laissez faire*, in much the same way non-competitive markets can damage economic efficiency when individual economic agents are in a position to exploit their market power in pursuit of their own economic welfare.

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Even policy-makers who share an ultimately common view of what would constitute desirable outcomes may fail to take appropriate action. When implementing policies that have effects beyond their immediate constituency, each may rely on others to implement costly actions in pursuit of a *common good*, and inaction may result even when all share similar views on appropriate actions. Again, the nature of the relevant policy failure is similar to what may be observed when interactions at the individual level fail to address public-good aspects appropriately: just like individuals cannot be expected to spontaneously pay taxes in the absence of collective enforcement, so policy-makers cannot be expected to implement the tax, subsidy and regulation policies that would be optimal from the viewpoint of a large integrated area when their constituency is smaller than the scope of those policies. In both cases, the failure to see policy tradeoffs in their entirety can imply that policy implementation fails to address them appropriately (Sinn, 2003). When this happens, poor coordination results in outcomes that are unsatisfactory from the constituents' and policy-makers' own points of view. Just as market interactions can fail to support efficient outcomes when some markets fail to exist or function properly, so imperfect coordination of (for example) state aid to industry can fail to foster efficiency.

The problems may be starkly illustrated in the context of child labour standards. In a perfect world, children should not work, for their own as well as society's good, since their time is more productive if they learn through play and schooling, and grow ready to work better in adulthood. But is a ban on child labour, such as that in ILO (1973), the right way to address real-life child-labour problems? Like other prohibitions envisioned by labour market regulation, a ban can be motivated by human value considerations that abstract from economic considerations, or it may improve welfare uniformly if market interactions are highly imperfect: for example, Basu and Van (1998) show that if child labour reduces adult wages, then both an equilibrium with child labour and one without can exist, and that while welfare is higher for all workers in the latter, the former may be the decentralized equilibrium result of uncoordinated choices unless child labour is prohibited. But, and again similarly to other institutions, a ban on child labour is more likely to have mixed welfare and distributional implications. In rich countries, public opinion clearly opposes child labour. But the same is clearly not true in poor countries, where children's work may often be a welfare-improving way out of extreme poverty or even starvation (Basu, 1999). The opposition of rich countries to child labour in developing countries may be motivated by personal tastes, or by the consequences of a supply of cheap products to compete with the unskilled labour in rich countries. In both cases, the behaviour of citizens of poor countries and of their governments imposes what economists call an externality on rich countries: a proper negative externality, if opposition to child labour is rooted in tastes; a "pecuniary" externality, if it is rooted in concerns about the implications that low-price supply (albeit efficient) has for income distribution. As Pallage and Zimmermann (2007) point out, addressing such externalities requires side payments: a simple ban on child labour, while appealing for rich countries, would not be acceptable to poor countries.

In the international context, distribution and redistribution mediated by financial markets and policies may occur across many dimensions: not only between labour and other factors of production within each country, but also between workers across countries' borders. Unfortunately, a supranational labour policy needs to be integrated with other aspects of social policy, and such policies not only reflect economic development levels, but are also deeply rooted in country-specific social and political traditions. Full economic integration requires not only sufficiently similar development levels (which may in part, but not completely, be the result of integration itself) and well-functioning markets but also, as long as markets do not function perfectly, well-designed compensatory payments, supported by sufficiently robust feelings of solidarity and a suitable political discussion arena. Within each country, redistribution towards non-employed workers (be they family members or subsidy recipients) is an essential component of the welfare gain for all workers. Very little compensation can be envisioned to address "fair wage" problems in interactions with less-developed countries.

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Across symmetric developed countries, it could suffice to coordinate policies, so as to ensure that “competition among systems” does not, in race-to-the-bottom fashion, defeat the purpose of policy interference with *laissez faire* market interactions. The issue is particularly important in the European Union, both because of the unprecedented degree of economic integration achieved by its member countries, and because lack of policy action in the labour field contrasts with extensive harmonization of other markets’ regulatory frameworks (Bertola et al., 2001). The *status quo* configuration of European welfare and labour market systems is challenged by increasing intensity of product market competition across and within member countries’ borders, by increased mobility of capital in the absence not only of controls but also of exchange rate risk, and by mobility of labour (at least at the margin, and from outside the area). All this may, on the one hand, make protection more desirable for workers by increasing the intensity of uninsurable labour market shocks; but, on the other hand, it may make it more difficult for institutions to provide protection, as producers need to react more efficiently to market signals, and systems of social protection need to compete for tax and contributions revenues (Sinn, 2003).

In practice, and not surprisingly, labour market institutions are quite stable within each member country. But they are also quite different across the EU, and subject differently to reform pressures from economic integration forces. Different configurations of similarly motivated protection systems are differently suited to withstand the pressures of economic integration. The decentralized wage bargaining, low minimum wages, and temporary unemployment insurance of the United States and other Anglo-Saxon countries allow their labour markets more adjustment dimensions than are possible for those of continental European countries, where regulation interferes directly with the wage and employment dimension of *laissez faire* outcomes via centralized wage setting and constraints on job creation and destruction. Past evidence indicates that such institutional configurations are ill-equipped to foster the kind of inter-industry mobility that would be necessary to exploit trade opportunities. In Germany, for example, apprenticeship-based training and industry-level wage bargaining have historically resulted not only in high productivity at the industry level, but also in peculiarly low inter-industry worker mobility. Integration of EU economies with the CEEC area, whose comparative advantage lies in very different industries, can be predicted to add inter-industry labour adjustment pressure arising from trade with other low-income countries. Geographic labour mobility is also much lower in Europe than in the United States. This is not only due to differences in culture and language: after all, in the 1950s and 1960s workers did move in Europe, not only within countries towards cities and industrial areas, but also across European borders. Rather, the relative immobility of Europeans reflects a lack of incentives, due to same institutions that underlie slow inter-industry mobility. Continental European systems of industrial relations and social policy tend to subsidize non-employment in declining areas, and fail to reward mobility with the wage differentials and easy job-finding opportunities that motivate Americans to migrate towards booming regions (Bertola, 2000a and 2004d).

In the past, continental European countries have often avoided the impact on relatively rich labour markets (through migration or product-market competition) of integration with sources of cheap labour by explicit or implicit subsidies to unemployment in relatively poor labour markets, such as Southern Italy and East Germany. Given such tendencies, it is not surprising to see that employment performance is worse in the larger, more heterogeneous countries of continental Europe than in smaller countries (such as Austria, Ireland, Portugal, the Netherlands). The advantages of being small are twofold. On the one hand, labour market policies do not interfere with the adjustments entailed by coexistence of differently developed regions within a single regulatory framework. On the other hand, small countries may be better equipped to take advantage of reform opportunities. For example, the Netherlands was the first continental European country to implement employment-generating reforms, quite possibly because its economic integration with Germany was quite complete earlier than in the rest of Europe. By the

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early 1980s, not only trade and capital mobility were completely liberalized but in the so-called D-mark block the exchange rates was also, in effect, irrevocably fixed. This implied that a little wage moderation could attract much more business from across the German border, and yield large employment gains in a small country. The resulting more attractive tradeoff between labour market flexibility and worker protection could indeed make reform attractive, through the mechanism outlined above. In the Dutch case, availability of natural gas revenues made it possible to address demands for protection by generous early and invalidity retirement provisions; in Germany's larger domestic market, labour demand remained relatively rigid, making incentives to reform of nationwide rules much weaker.

Federal transfers, especially in the form of co-financing schemes, do help American states to resist the race-to-the-bottom or integration-resistance tensions arising when independent constituencies independently administer social policies. Across EU member countries, transfer payments play only a very limited role, whether for the purpose of sustaining useful interference with labour market interference in the presence of concerns other than production efficiency, or for other politico-economic purposes. "Cohesion" and "structural" funds were introduced at the EU level when the enlargements of the 1980s for the first time brought substantially lower-income countries into the European Union. Concerns regarding accession of much poorer CEEC countries are similar, but a larger role cannot be played by transfers, because the EU does not have a proper and politically supported federal fiscal policy. Transfers would arguably have negative implications for the labour markets of some countries as they currently do for some regions.



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## 5. Concluding comments

This paper's selective review of theory, measurement and evidence emphasizes that labour market regulation may, but need not, serve a useful purpose, and that any assessment of policies and reforms should carefully take into account relevant structural features of each economy's labour and other markets. Of course, the way in which institutional pros and cons bear on policy choices is unavoidably filtered by a political process, because incomplete and imperfect markets rule out a "representative individual" approach. The pros and cons of institutions and reforms very much depend on points of view, and interference with market mechanisms unavoidably has distributional implications, as the costs and benefits of the relevant policies and institutions differ not only across countries, but also across individuals.

Minimum wages, for example, certainly reduce the employment opportunities of low-productivity individuals at the same time as they increase the average and reduce the dispersion of wages among higher-productivity workers. Such distributional effects interact importantly with a variety of economic and social characteristics of the relevant population. Heterogeneous labour productivity may depend on exogenous characteristics, such as age and gender, but may very well reflect policies and individual choices regarding education and training. The impact on consumption and welfare of lower employment for low-wage workers depends on whether such workers belong to families who also gain from the better wages of higher-productivity workers, and on their non-employment opportunities.

In general, however, market imperfections imply that aggregate efficiency considerations are not conveyed to all individuals by appropriate prices, and the resulting incentives to introduce distortions are heterogeneous across individuals with different productivity, different non-employment opportunities, or different mobility costs. Labour market institutions are pervasive and do matter, interacting with other institutional and structural features of real-life economies, not only for labour market outcomes but for any phenomenon where income distribution is relevant. Lo Prete (2008), for example, finds that standard indicators of labour market policies and household financial market access influence the relationship between aggregate consumption and income changes at the country level. Obviously, labour market regulation has pros and cons. The wide (albeit different) political support for it indicates that markets do fall short of maximizing all agents' welfare in this area. To assess whether each labour market's configuration strikes the right balance between the rigidity of regulation and flexibility of market forces, and why institutions differ across countries as widely as they do, it has and will be important for research to focus on how the benefits and costs of collective interventions in the labour market depend on structural features (such as the externality arising from the specification of mobility costs above); on the ease of individual financial market access (as indexed by the degree of utility curvature in the simple model above); and on the efficiency of policy administration.

If labour market institutions are a partial substitute for inefficient financial contracts (Bertola and Koeniger, 2007), and more flexibility in the labour market makes limited access to consumption smoothing all the more painful for workers, it is not surprising to witness heavy resistance to labour market liberalization in industrialized countries with poor financial markets, and it is sensible to package together labour and financial market reforms, as was the case in the United Kingdom in the 1980s (Koeniger, 2004). As repeatedly noted here and in the literature, these and other important complementarities across labour market and other institutions imply that across-the-board deregulation has advantages over piece-meal reform if the objective is to bring the economy nearer to its *laissez faire* configuration and, for example, increase employment. But if institutions serve a useful purpose in at least some citizens' view, complementarities also imply that

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resistance to comprehensive reform is likely stronger and more justified than resistance to marginal reforms. Thus reform, when necessary, may have good reasons to be slow, and to be undertaken on a case-by-case, unavoidably experimental basis.

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