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Concepts and Measurement of Labour Market Institutions

Wolfgang Ochel*

Introduction

Institutions have a decisive importance in determining how labour markets function. They place constraints on the individual behaviour of market participants and in so doing they may direct it in a certain direction. Institutions can reduce uncertainty and contribute to stabilising expectations. They may take the form of laws, ordinances, and legal precedents together with moral precepts, norms and customs.

The scientific analysis concerns itself, on the one hand, with the origin and evolution of labour market institutions. Ideally, they are created in order to reduce inefficiency due to market failure, in order to correct the distribution of earnings and in order to increase the security of income. Interest groups can also give rise to institutions (Blau and Kahn 1999). On the other hand, analysis of institutions is also concerned with their effects. By means of aggregate analysis of effects and microeconomic evaluation one seeks to estimate the influence exerted by labour market institutions on certain indicators or the influence they exert on market participants directly affected.

Whilst these two areas of analysis have received a great deal of attention, the labour market institutions themselves have been mostly neglected. But institutional arrangements must be captured adequately if one is to have an explanation for their origins and if their effects are to be understood. Capturing institutions requires that the domain regulated by an institution should be clearly defined and delimited. What is more, it is necessary to formulate a theoretical concept that can serve as the basis for capturing the institutions. Furthermore, the institutions must be investigated empirically. Apart from the assessment of institutional arrangements, qualitative information must be transformed into quantitative information. And finally, it may prove to be necessary to aggregate individual indicators to a composite indicator.

The following article deals with capturing formal labour market institutions. Section 2 defines labour market institutions and presents the domains ruled by them. Section 3 provides a survey of the most important sets of data available for international comparisons. Section 4 presents the measurement concepts that are most prevalent and analyses the problems that arise in connection with the measurement of institutions. In sections 5 to 8, the institutional arrangements regarding employment protection, wage bargaining, the social security system as well as active labour market policy, and taxing labour are reviewed and the concepts on which they are based are analysed. Section 9 deals with the characteristics of institutions that up till now have been neglected when capturing labour market institutions. The summary in section 10 concludes the article.

Definitions and domains

Labour market institutions are defined here by generally known rules that are designed to give structure to the recurring interactions in the labour market. If the enforcement of these rules involves recourse to the state's monopoly of the use of coercive force, then the institutions are referred to as formal institutions. Examples of such institutions are laws, ordinances and legal decisions. Institutions whose enforcement does not involve recourse to the state are referred to as informal institutions. Moral concepts, norms and customs are examples of such institutions (Voigt 2002).

Interdependencies exist between informal and formal institutions. Informal institutions may supplement formal institutions or may be a condition for their existence (Agell 1999). For instance, the generous safety net provided for by the Danish "flexicurity" model relies strongly on public spiritedness. A lack of public spiritedness would raise moral hazard, which would hinder the implementation of an efficient programme of public employment insurance (Algan and Cahuc 2005). On the other hand, informal institutions can impair the effectiveness of formal institutions. If for example the population has strong feelings about "fairness" in the sense of a low wage spread, then wage reductions as a result of decentralising wage negotiations will be difficult to attain (Bewley 2004).

* Wolfgang Ochel is senior researcher at the Ifo Institute for Economic Research at the University of Munich and CESifo Research Fellow. Gratitude is expressed to the participants of the IAB/IWH Workshop on Labour Market Institutions and Employment in Halle on November 14 and 15, 2005 and especially to Werner Eichhorst for valuable comments.

The nature of the legal system affects, to a large extent, the character of institutional systems. This influence is quite distinct, depending on whether the legal system is based on English common law or whether it is based on civil (or statutory) law. Common law is characterised by the importance of decision making by juries, by independent judges, emphasis on judicial discretion as opposed to the dominance of codified law. The system of common law evolved originally in England and was transplanted to English-speaking countries. Civil law is characterised by a less independent judiciary and gives a greater role to codified substantive and procedural rules. It evolved out of Roman law and has been incorporated into the civil codes of France and Germany and taken over by many countries on the European continent and by Japan (Botero et al. 2003, 7-9).

Table 1

Statutory labour regulations

Employment laws
Alternative employment contracts
– Part-time contracts
– Fixed-term contracts
– Family member contracts
Conditions of employment
– Flexibility of working time requirements
– Mandatory payment for non-working days
– Minimum wage legislation
Job security
– Grounds for dismissal
– Procedures for dismissal
– Notice period
– Severance payment
– Constitutional principles covering protections against dismissal
Industrial (collective) relations law
Collective bargaining
– Duty to bargain with unions
– Extension laws
– Closed shops
Workers' participation in management
– Mandatory appointment of workers to the board of directors
– Workers council by law
Collective disputes
– Legal strikes
– Procedural restrictions to strikes
– Employer defences
– Compulsory arbitration
– Constitutional protection of the right to strike
Social security laws
Old age, disability and death benefits
– Required time of contributions to access a benefit
– Contributions as a percentage of the worker's monthly salary
– Replacement rate
Sickness and health benefits } similar methodology for sub-indices
Unemployment benefits } similar methodology for sub-indices

Source: Botero et al. 2003.

Following Botero et al. (2003), formal labour market institutions may be assigned to the categories of employment law, of industrial and collective relations law, and social security law. Employment laws govern the individual employment relationship, including the nature of labour contracts, the terms of the contract and the termination of the employment relationship. Laws on industrial relations and collective relations regulate the process of wage bargaining and the adoption and enforcement of collective agreements; they also form the legal basis for trade unions and they lay down the framework for workers' or employers' industrial action. Social security laws govern the social response to individual needs. They deal with old age, disability, illness and unemployment (Table 1). In addition to the three areas of regulation just mentioned, in the literature on this subject active labour market policy (in addition to the already mentioned passive measures) and taxation of labour income are also reckoned among labour market institutions affecting the development of labour markets (Nickell et al. 2005; Checchi and Lucifora 2002, 374). Occasionally regulations of product markets, barriers to labour mobility, the institutional system relevant to private households and the system of vocational and further training are also included amongst labour market institutions (Schütz et al. 1998).

Data sets

For a long time labour market effects of institutions received scant attention. As a result, the task of collecting information on labour market institutions was neglected. Before the 1990s, very little work on the measurement of labour market institutions was carried out. Since then work in this area has been more extensive and efforts have been made to collect data that are internationally comparable. Considerable improvement in the quality of measurement has been made. International organisations, and in particular the OECD, have played an important role in this work. Theoretical and empirical research in the social sciences has also contributed to progress in this area.

In Table 2 the principal sources of internationally comparable data on formal labour market institutions provided by international organisations are listed. The following data sets are of particular interest:

– Employment protection is captured by the OECD Employment Outlook 1999 and 2004 for

the late 1980s, the late 1990s and 2003. The employment protection of regular workers against individual dismissal, the specific requirements for collective dismissals and the regulation of temporary forms of employment are summarised by means of 22 (in some cases 18) single indicators.

- The characteristics of wage-setting institutions (trade union density, collective bargaining coverage, the centralisation and coordination of wage bargaining) are analysed in the OECD Employment Outlook 1994, 1997 and 2004.
- Social security laws are described in the European Commission's MISSOC database and by Social Security Programs Throughout the World. The effects of social benefits on incomes of working-age individuals and their families are analysed in the OECD study Benefits and Wages (2004a). Information on active labour market policies is included in the OECD Employment Outlook.
- The best information on labour taxes is provided by the OECD in Taxing Wages (2005).

Comparable information on labour market institutions are also supplied by the reports and databases of the Fraser Institute, the Heritage Foundation, Incomes Data Services, the International Institute for Management Development, Lausanne, Watson Wyatt Data Services and the World Economic Forum.

Table 2

Sources of data on formal labour market institutions for international comparisons

General – OECD Employment Outlook, various issues – OECD Economic Department Working Papers – European Commission, Employment in Europe, various issues – European Industrial Relations Observatory (EIRO) – EUROSTAT, New Cronos database – ILO databases – CESifo DICE database for institutional comparisons
Employment laws *Employment contracts and conditions of employment* – EIRO, Comparative studies and EMIRE – OECD Employment Outlook, various issues *Job security* – OECD, Employment Outlook 1999, ch. 2 and 2004, ch. 2 – World Bank, Doing business
Industrial (collective) relations law *Collective bargaining* – OECD, Employment Outlook 1997, ch. 3 and 2004, ch. 3 – EIRO, Comparative studies and EMIRE – Blanpain E., ed., International Encyclopedia for Labour Law and Industrial Relations – European Industrial Relations Review *Workers' participation in management and collective disputes* – Blanpain E., ed., International Encyclopaedia for Labour Law and Industrial Relations – EIRO, Comparative studies and EMIRE – European Industrial Relations Review
Social security laws and active labour market policies – European Commission, Mutual Information System on Social Protection in the EU Members States and the EEA (MISSOC) – Social Security Programs Throughout the World – OECD, Benefit and Wages, various issues – International Social Survey Programme – OECD Employment Outlook, various issues
Labour taxes – OECD, Taxing Wages, various issues
Comparable information on labour market institutions are also supplied by the reports and databases of the Fraser Institute, the Heritage Foundation, Incomes Data Services, the International Institute for Management Development, Lausanne, Watson Wyatt Data Services and the World Economic Forum. Individual researchers have made important contributions on the concept and measurement of labour market institutions. See the references in: Boeri et al. (2001); Kenworthy (2001b); OECD, Benefits and Wages 2004a and OECD, Employment Outlook 2004, ch.2 and 3.

Source: Own compilation.

Both the quantity and the quality of information on formal labour market institutions have improved in recent years. But there are also lacunae in available data that need to be closed. With respect to some institutional areas, such as court decisions, there is only scarce information. Information on the degree of implementation of institutional arrangements is lacking, as is information on the number of persons that are affected by certain arrangements. Then too, the concepts on which the collection of information is based must be further developed. And finally, the methods of measurement must be improved.

Measurement

As a rule, the measurement of labour market institutions is carried out with a certain problem in mind.

The first step is to define the institution. Then one proceeds to make the concept on which the collection of information about the institution is based susceptible to measurement. For this purpose, the separate dimensions of the concept must be worked out in greater detail. In the case of employment protection these would be the period of notice required, the amount of severance pay, the definition of unfair dismissal etc.

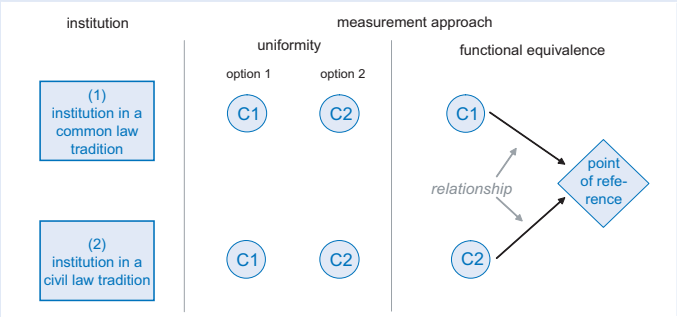
The method of capturing formal institutions consists in the summing-up, interpretation and assessment of laws, ordinances and court decisions by experts. An example of what is meant by summing-up and interpretation is provided by the OECD's description of employment protection regulations (OECD 2004b, background material for chapter 2). As a rule, assessments are made by assigning scores. Since labour market institutions are typically multidimensional, the task of reducing them to quantitative indices is not simple. Scores may be assigned along a metric scale (e.g. the strictness of employment protection along a scale of one to six, with higher scores representing stricter regulation; OECD 2004b, Annex 2. A1). Or the scores may be based on rank (OECD 1999, tables 2.2 – 2.5). Internationally comparable assessments may be carried out centrally, or decentrally at the level of individual countries.

In some cases, individual indicators are aggregated to form a composite indicator. Owing to their ability to integrate large amounts of information into an easily understood result, such composite indicators are useful. In constructing composite indicators the relevant indicators are standardised in order to allow comparisons. The indicators are weighted according to their significance and then aggregated (Freudenberg 2003). For instance, in constructing a summary measure for the strictness of employment protection, the OECD started from 18 indicators, which were converted into cardinal scores ranging from 0 to 6. These indicators were then aggregated in a four-step procedure based in this case on an arbitrary weighting scheme. A variety of difficulties can arise when constructing a composite indicator. Outcomes and country rankings may depend largely on the approach selected. For this reason, sensitivity tests should be conducted to analyse the impact of using different standardisation techniques, changing weights, etc. on the results of the composite indicator.

The measurement of labour market institutions should be as objective, reliable and valid as possible. Objectivity expresses the extent to which the results of measurement are independent of the person that uses the instrument. Reliability is an indication of whether the results of measurement can be duplicated. Validity refers to the extent to which theoretical concepts are captured by the indicators (Dieckmann 1998, 216-227), a criterion that is particularly important. We therefore discuss the problems that can occur with the measurement of labour market institutions with regard to this criterion.

Problems of validity may arise in collecting internationally comparable data on labour market institutions, whenever institutions have evolved in different contexts. An example of this is given by institutions that have evolved in a society with a common law tradition as opposed to the civil law tradition of continental European countries. In such a case a uniform concept and similar indicators do not necessarily adequately reflect the institutions under study. For example, the strictness of employment protection in the Anglo-Saxon countries cannot be registered with the use of indicators that are primarily geared to codified laws. And vice versa, it would not be suitable to examine the dismissal protection regulations of continental European countries using indicators that are primarily based on legal precedents (court decisions). One approach to overcoming this problem is to replace the identity of concepts and indicators by the functional equivalence of concepts and indicators (Kenworthy and Kittel 2003, 22). "Functional equivalence refers to the requirement that concepts (in one setting, W.O.) should be related to concepts in other settings in more or less the

UNIFORM VERSUS FUNCTIONAL EQUIVALENT CONCEPTS AND INDICATORS FOR MEASURING INSTITUTIONS



C1: concepts and indicators for measuring institutions in a common law tradition
C2: concepts and indicators for measuring institutions in a civil law tradition.

Source: Own design.

same way" (van Deth 1998, 6). The comparability of measuring concepts can be derived only from their relationship to a common point of reference (Figure). Measurement concepts are equivalent to the degree to which "[the] results provided by [them, W.O.] reliably describe with (nearly) the same validity a particular phenomena in different social systems" (Przeworski and Teune 1970, 108).

Furthermore the validity may be impaired by the method of data collection employed. If the assessment of institutional arrangements in different countries is carried out centrally, e.g. by a supranational organisation, then the problem can arise that national surveys, reports and other source materials on which the assessment is based have been prepared for purposes which differ from the assessment and which furthermore differ from one country to another. As a consequence, the information in the individual countries may be different with respect to its type, content and breakdown. What is more, the availability of information may be very different from one country to another. This may refer to the content of regulatory measures, to the degree to which they are actually implemented and to the number of persons that are affected by them. All of these factors make it difficult to assess national sources. In many cases, organisations conducting central assessments are forced to work with available information on a lowest common denominator basis. Such problems do not arise when specific international surveys are used as a basis of the assessment.

If the assessment of institutional conditions is carried out decentrally by experts in each country, then the assessment is facilitated, since as a rule, local experts have more intimate knowledge of conditions in the country than foreign experts. But different kinds of problems arise in this case. In making international comparisons it is difficult to ensure that national experts employ the same standard in assessing institutional arrangements and that when they assign scores they take into account the relative position of a country in relation to other countries. These difficulties are exemplified by the assessment of hiring and firing practices in different countries presented in the Global Competitiveness Report 2004–2005 of the World Economic Forum (2004). The Forum surveys business leaders with respect to their assessment of hiring and dismissal practices in their own countries (World Economic Forum 2004, 599); the questions are couched in terms of a scoring on a scale from one (hiring and firing of workers is impeded by regulations) to seven (… is flexibly determined by employers). With a score of 2.2, Germany occupies place 102 among 104 countries, just ahead of France (place 103), but behind Portugal, Spain, Greece and Turkey. At the same time, the World Bank (2005) in its Doing Business Report for 2006 and the OECD (2004b, 117, column 13) both consider Germany's hiring and firing regulations to be less restrictive than those of the countries just mentioned. The difference in ranking may be due to the assessment being based on different conceptual approaches. But one cannot exclude the possibility that the German experts in the World Economic Forum approached the task of assessing Germany's labour market flexibility in a more "pessimistic" frame of mind than their foreign counterparts with respect to their own countries. In such a case one might attempt to make the assessment standard more comparable between the countries involved by engaging the experts in an organised exchange of views.

And finally, the method employed in forming composite indicators may give rise to problems of validity. Indicators which are aggregated to a composite indicator have to be weighted. They may be given equal weights or differing weights reflecting their significance. The relative economic impact of the base indicators can be determined by economic theory or by empirical analysis (e.g. regression analysis, principal component analysis or factor analysis) examining the interrelationship among these indicators. Weights can also be set based on correlation coefficients between indicators and a dependent variable such as strictness of employment protection (Freudenberg 2003, 12). Indicators can also be weighted by experts who understand the data and are familiar with the theoretical context. But often transparency is not present. In many composite indicators all base indicators are given the same weight largely for reasons of simplicity. Inappropriate weighting may result in misleading composite indicators.

Employment protection

In addition to the solution of the measurement problems, the analysis of labour market institutions presupposes that suitable analytical concepts be developed for the individual regulatory areas. In the following the most important concepts for four regulatory areas will be introduced and discussed. We begin with the area of employment protection.

According to the OECD (1999, 50), the term "employment protection" refers both to regulations con-

cerning hiring as well as firing. In the first instance, the relevant regulations concern the conditions under which fixed-term contracts may be concluded, which offer the possibility of circumventing the provisions of protection against dismissal within a regular employment relationship. Regulations with respect to dismissal concern both the individual termination of a regular employment relationship and collective dismissals. The protection of regularly employed workers against dismissal represents a restriction on employers, who are no longer free to give notice to their employees without justification. This restriction has been attained through two types of sanctions: the obligation to continue the employment relationship despite notice having been given or severance pay. The prior condition for the general protection against wrongful dismissal to be effective is that an employment relationship should in fact exist, i.e. that someone is in a position of dependent gainful employment. And finally, there are certain conditions that must be fulfilled if collective dismissal is to be legally justified.

Capturing employment protection is difficult. The arrangements that exist as a result of constitutional provisions, legal measures or collective agreements are complex and the documentation of their implementation is incomplete. The complexity becomes apparent when for example the OECD employs not less than eight indicators of protection against dismissal of employees with regular employment contracts: notification procedure; delay involved before notice can be given; length of notice period; severance pay; definition of unfair dismissal; length of trial period; compensation following unfair dismissal; and possibilities of obtaining reinstatement after unfair dismissal (Table 3). In order to identify the provisions applicable in this area it is necessary to analyse very carefully the laws, ordinances and wage agreements. But this is only the first step; one must also take into the account how these provisions are implemented and enforced. And this is up to courts, arbitration boards and the public administration in general. Courts of law, for example, interpret how the law is to be applied, decide on the reinstatement of employees in the event of wrongful dismissal, and determine the amount of severance pay, etc. Furthermore, it is of interest to know what proportion of employees take legal action in a court of law to make good their right to seek protection against wrongful dismissal; it is equally interesting to know how often such legal action is successful. There is a similar need for information about the decisions of arbitration boards and the public administration. Administrative records represent an important source of information with respect to the implementation and enforcement of employment protection (Bertola et al. 1999 and 2000).

Table 3

Employment protection legislation summary indicator at four successive levels of aggregation[a] and weighting scheme

Level 4 Scale 0-6	Level 3 Scale 0-6	Level 2 Scale 0-6	Level 1 Scale 0-6		
Overall summary indicator	Regular contracts **(5/12)**	Procedural inconveniences **(1/3)**	1. Notification procedures		(1/2)
			2. Delay to start a notice		(1/2)
		Notice and severance pay for no-fault individual dismissals **(1/3)**	3. Notice period after	9 months	(1/7)
				4 years	(1/7)
				20 years	(1/7)
			4. Severance pay after	9 months	(4/21)
				4 years	(4/21)
				20 years	(4/21)
		Difficulty of dismissal **(1/3)**	5. Definition of unfair dismissal		(1/4)
			6. Trial period		(1/4)
			7. Compensation		(1/4)
			8. Reinstatement		(1/4)
	Temporary contracts **(5/12)**	Fixed-term contracts **(1/2)**	9. Valid cases for use of fixed-term contracts		(1/2)
			10. Maximum number of successive contracts		(1/4)
			11. Maximum cumulated duration		(1/4)
		Temporary work agency (TWA) employment **(1/2)**	12. Types of work for which TWA employment is legal		(1/2)
			13. Restrictions on number of renewals		(1/4)
			14. Maximum cumulated duration		(1/4)
	Collective dismissals **(2/12)**		15. Definition of collective dismissal		(1/4)
			16. Additional notification requirements		(1/4)
			17. Additional delays involved		(1/4)
			18. Other special costs to employers		(1/4)

[a] Version 2.

Source: OECD Employment Outlook 2004, p. 106.

If capturing employment protection in one country is a problem, then obtaining data for international comparisons is all the more difficult, since one must make sure that the information used should be internationally comparable. If one goes beyond cross-section comparisons and attempts a panel analysis, then the concept employed in capturing employment protection must be adjusted to take into account its evolution in the course of time. Basic changes in the regulatory framework must be taken into account as must the emergence of new forms of employment relationships such as fixed-term contracts. As far as possible, one must ensure that concepts are functionally equivalent.

One approach to quantifying the strictness of employment protection in inter-country comparisons is to use surveys. The survey results form the basis for rankings. Such surveys were carried out for the first time in 1985. The International Association of Employers commissioned surveys in 14 countries designed to assess the severity of rules restraining the termination of employment contracts. In the same year, the Commission of the European Union conducted a survey of entrepreneurs in 9 EU countries. In this survey the respondents were asked to assess the employment effect of shorter periods of notice of dismissal, of simpler legal procedures, and of a reduction in redundancy payments (Emerson 1988, reviews the results of these surveys). Bertola (1990) based his rankings of ten industrial countries on the information obtained from these surveys. At the present time, organisations such as Watson Wyatt Data Services, Incomes Data Services and the World Economic Forum carry out surveys.

Whilst the surveys mentioned above request information about the general assessment of the strictness of employment protection, the OECD's work in this area has been based on a number of indicators. Taking Lazear (1990) as a point of departure, who only considered two obstacles to firing workers, Grubb and Wells (1993) and the OECD Job Study (1994b) considered eight indicators referring to obstacles to dismissal of employees with regular contracts (indicators one to eight in Table 3). They also consider the possibilities of circumventing general protection of employment by means of fixed-term contracts and temporary work agency employment. Regulatory efforts in these two areas are represented by a further six indicators (indicators nine to fourteen in Table 3). In the OECD's Employment Outlook 1999 and 2004 these studies have been broadened by the inclusion of indicators bearing on collective dismissal (indicators fifteen to eighteen in Table 3). The descriptions of these 18 indicators are based on a variety of national sources as well as multi-country surveys by Watson Wyatt Data Services, Incomes Data Services and the European Commission. OECD governments provided additional information based on a request for information from the OECD Secretariat (OECD 1999, 90).

In order to allow for meaningful comparisons, a four-step procedure has been developed for constructing cardinal summary indicators of strictness of employment protection. The 18 indicators are initially expressed in units of time (e.g. months of notice), as a cardinal number (e.g. maximum number of successive fixed-term contracts allowed), or as a score on an ordinal scale (0 to 2, 3, 4 or simply yes/no). These first-level measures are accounted for in comparable units and then converted into cardinal scores ranging from 0 to 6. This scoring algorithm is somewhat arbitrary (OECD 1999, Table 2.B.1 and OECD 2004b, Table 2.A.1.1). The three remaining steps consist in forming successive weighted averages, thus constructing three sets of summary indicators that correspond to successively more aggregated measures of strictness of employment protection (OECD 1999, Annex 2 B; OECD 2004b, Annex 2.A.1; and Table 3).

The OECD summary indicators of the strictness of employment protection rank the United States, Canada, the United Kingdom, Ireland and New Zealand as the OECD member countries providing in 2003 the least

Table 4

OECD summary indicators of the strictness of employment protection legislation, 2003[a)]

Country	Score[b)]	Country	Score[b)]	Country	Score[b)]
United States	0.7	Czech Republic	1.9	Norway	2.6
Canada	1.1	Korea	2.0	Sweden	2.6
United Kingdom	1.1	Slovak Republic	2.0	France	2.9
Ireland	1.3	Finland	2.1	Greece	2.9
New Zealand	1.3	Poland	2.1	Spain	3.1
Austria	1.5	Austria	2.2	Mexico	3.2
Switzerland	1.6	Netherlands	2.3	Portugal	3.5
Hungary	1.7	Italy	2.4	Turkey	3.5
Denmark	1.8	Belgium	2.5		
Japan	1.8	Germany	2.5		

[a)] Summary indicator for regular and temporary employment and collective dismissals. – [b)] Higher scores represent stricter regulation.

Source: OECD (2004b, 117).

employment protection. The results of the OECD survey indicate that the strictest protection against dismissal is to be found in three southern European countries: Greece, Spain and Portugal and in the threshold countries Mexico and Turkey (Table 4). For the 28 countries shown in Table 4, the country rankings proposed by the OECD differ considerably from the rankings of the World Economic Forum (2004, 599). Spearman's coefficient of rank correlation is only 0.58.

The indicator of the strictness of employment protection developed by the OECD is in all likelihood the best indicator that is available at the moment for the purpose of making international comparisons in this area. Important areas of regulation are taken into account. The choice of 18 indicators goes far to take adequately into account the complexity of the problem. Nevertheless, the OECD's approach does have some weaknesses:

- The OECD focuses on laws and ordinances bearing on protection against wrongful dismissal, but devotes little attention to other areas such as the system of social security which also may provide protection against loss of employment. One such mechanism is the system of experience rating in the United States where an employer's social security contribution depends in part on the firm's lay-off activity. Then too, the interaction of the protection against dismissal with other labour market institutions must be taken into account if the actual level of protection is to be determined. As Belot and van Ours (2000) have shown, such interactions may reinforce or undermine the level of protection.
- The OECD's measure of employment protection is mainly based on legislative provisions. Protection against dismissal that is a part of wage agreements or of individual employment contracts (e.g. provisions for severance pay) is neglected.
- Similarly, the question to what extent the employment protection legislation is actually enforced receives too little attention. Up till now there has not been an adequate response to Bertola et al.'s (1999) plea for the enforcement of employment protection to be taken into account. The implementation of regulatory measures that are based on legal dispositions is primarily in the hands of labour tribunals. They interpret the law and hand down decisions on the cases brought before them. The stringency of the employment protection actually afforded to workers depends to a great extent on these decisions. The importance of labour tribunals, however, varies greatly from one country to another. According to a survey conducted by the ILO in Spain in 1995, five employees out of a thousand instituted proceedings in a labour tribunal, whilst in Ireland only one out of a thousand took such action. In Spain 72 percent of those who took legal action received a favourable verdict, whereas in Ireland the employees won in only 16 percent of the cases (Bertola et al. 1999, 23). Other disputes are resolved by arbitration boards. It is difficult to collect systematic information on judicial and other resolution of labour disputes (e.g. on the number of cases in litigation, how long they are pending and how they are resolved) and work in this area has only just begun.
- The OECD provides no information on the proportion of employees that are covered by employment protection. It thus does not take into account that legal provisions, wage agreements, court decisions etc. exist which preclude giving regular notice of dismissal to certain clearly defined categories of employees (e.g. older employees, or those who have worked in the production unit for a certain period). On the other hand, it does not take into account that the application of employment protection may depend on the production unit being larger than a minimum size and/or that there may be provisions requiring a waiting period; persons economically active in a production unit that have the formal legal status of self-employed (e.g. a subcontractor) but are deemed to be dependent employees or workers in the informal sector may not be covered by the employment protection provisions either (Rebhahn 2003, 190-194).
- Converting the first-level indicators of employment protection legislation into cardinal scores and the assignment of weights is somewhat arbitrary (Addison and Teixeira 2001, 10-14). "The assignment of scores and weights adds a subjective dimension to the EPL strictness scores that is additional to the judgements already embodied in the… descriptive indicators" (OECD 1999, 117). The extent to which the OECD has analysed the interrelationship among the first-level indicators empirically is not clear.
- The OECD indicator for employment protection only covers the late 1980s, the late 1990s and 2003. In order to be able to carry out panel analyses, it would be desirable if the OECD provided longer and more complete time series.
- Theoretical studies emphasise the analogy between employment protection regulation and a tax borne by the employer on employment adjustment. The cost implications of the various regulatory provisions for employees are not mea-

sured by the OECD. These costs include severance payments, costs of litigation, and costs arising from legally proscribed periods of notice, social plans, and continued payment of remuneration for employees enjoying protection. Furthermore, there are costs that are borne by society in general such as unemployment benefits (Jahn 2004, 11). Information on the costs involved in hiring and firing for businesses are, however, provided by other organisations such as the World Bank Group (2005).

Wage setting institutions

Collective bargaining needs to be seen against the background of wage setting institutions. The extent of trade union membership and the recognition of unions as a bargaining agent are to a substantial degree determined by regulations. Union bargaining power is normally measured by trade union density and collective bargaining coverage. In addition to these two indicators, the characteristics of the bargaining process play an important role in the evolution of wages. Centralisation and coordination of wage bargaining are considered to be the most important ones.

Trade union density is defined as the ratio of union members to employed wage and salary workers. Gross density refers to all union members, including unemployed and retired members; net density refers only to employed union members. To measure union bargaining power, net density is more appropriate (Ebbinghaus and Visser 2000). In Belgium, Denmark, Finland and Sweden union density is much higher than in other countries. This is due to the so-called Ghent system, whereby unemployment benefits are administered by union-affiliated institutions. Taken in isolation union density is not an adequate measure of union bargaining power. It does not capture the countervailing power of employer associations, the degree of competition in the relevant product markets and the coverage of collective agreements (Flanagan 1999).

Collective bargaining coverage is defined as the proportion of employees (or production units) whose remuneration is regulated by collective wage agreements. The wages agreed upon – the so-called union scales – represent the minimum remunerations. As a rule, the application of a wage agreement is not limited to union members. It has become common practice for employers to apply the terms of collective contracts to their non-union work force as well. Otherwise, they might be indirectly promoting unionisation. In addition to voluntary extensions, collective agreements can be generally binding within an industrial sector by administrative extensions, covering all employers who are not members of its signatory parties. The scope of collective agreements can also be reduced. Contractual "opt-out clauses" give management and work councils in individual plants authority to make wage agreements. In addition to these legally defined ways, management and work councils can agree upon deviations from currently valid wage agreements without the involvement of the collective bargaining parties or management can breach the wage agreement unilaterally (Ochel 2005). Figures on collective bargaining coverage are usually hard to obtain. For some countries, survey data exist. In other countries, data on coverage are provided by bargaining parties. In several countries, no kind of systematic data collection is undertaken. In this case, experts have to estimate coverage. Information on illegal practices involving deviations from collective agreements is not available (EIRO 2002; OECD 2004b).

The degree of centralisation of wage bargaining refers to the level at which wages are bargained or set. Two elements must be considered in determining the degree of centralisation. The vertical dimension has to do with the aggregation of economic activities: wages can be defined at the company/plant level (decentral), branch/industry level (sectoral) and at the level of the entire economy (central). The horizontal dimension refers to whether workers in different types of jobs (white-collar and blue-collar jobs, different crafts or occupations etc.) bargain jointly or separately. The classification of countries with respect to their bargaining level is complicated by the fact that two or more levels may coexist and are mutually exclusive. Or bargaining may occur at multiple levels, in which case the results of negotiations at the higher levels have a determining effect on the agreement at lower levels (Traxler et al. 2001, 112).

In order to determine the degree of centralisation of wage bargaining it is necessary to obtain information with respect to the number of employees whose remuneration is set at the different levels of negotiation. One approach is only to take into account employees who receive wages or salaries corresponding to union scales. Another – more appropriate and more sensible – approach is to include employees who receive remuneration above union scales (wage

drift) or whose pay is not covered by wage agreements. In such cases effective wages are negotiated individually at the plant level.

The first studies dealing with the degree of centralisation of wage negotiations were carried out by Cameron (1984), Calmfors and Driffill (1988) and others. In the 1990s the OECD estimated the degree of centralisation of wage bargaining in member countries for the years 1980, 1990 and 1994. The OECD's approach was to assign country scores of 1 (company level), 2 (sector level) and 3 (economy-wide bargaining). Intermediate scores were assigned in cases in which bargaining occurred at more than one level. Ochel (2000) carried the OECD studies a step further by analysing the period from 1960 to 1999. In 2004 the OECD presented a fivefold classification scheme for the wage negotiation systems of 25 countries, covering the period from 1970 to 2000 (OECD 2004b).

In contrast to the centralised approach of the OECD, Traxler et al. pursue a decentral approach in which labour relations experts from 20 countries assessed the wage bargaining system of their country. The assessments were then compared with the existing literature and discrepancies resolved via discussion with the specialists. Apart from the vertical dimension of centralisation (3 levels and mixtures of levels), the horizontal dimension has been also included. Bargaining at a given level may occur for all groups of workers jointly or may be specific to a group. In all there are twelve categories (Table 5). The number of employees covered by each of the different levels is the most relevant criterion for classification. In 1997-98 the United States, Canada and New Zealand had the most decentralised bargaining system (with a score of 1) while Ireland (with a score of 12) and Finland (11) had the most centralised systems (Traxler et al. 2001, 114).

Table 5

Centralisation of wage bargaining level in the private sector; scores of the Traxler, Blaschke and Kittel measure[a)]

Scores	Central	Industry	Company and plant	All groups	Group specific
1			x		x
2			x	x	
3		x	x		x
4		x	x	x	
5		x			x
6		x		x	
7	x	x	x		x
8	x	x	x	x	
9	x	x			x
10	x	x		x	
11	x				x
12	x			x	

[a)] Scores have been reversed so that higher values indicate greater centralisation.

Source: Traxler et al. (2001), 307.

Whereas the OECD and Traxler et al. (2001) focus on the actual level at which bargaining takes place, Iversen (1999) and Golden et al. (2002) focus on the structural characteristics of the wage-bargaining process. (A survey in greater depth of these approaches can be found in Kenworthy 2001b.) Iversen seeks to identify the locus of bargaining authority. His centralisation index combines a measure of organisations and the share of unionised workers at each of the three main bargaining levels. The capacity of bargaining agents to implement their agreements is taken into account as well. Enforceable agreements presuppose that bargaining agents control most strike and lockout funds and can impose fines for non-compliance so that low-level bargainers cannot circumvent central or industry level wage agreements. By including the enforceability of bargaining agreements, aspects of wage coordination are combined with elements of centralisation of wage bargaining (Iversen 1999, 83-86).

In much the same way as Iversen, the centralisation index of Golden et al. (2002) is a measure of the centralising activities of confederations, rather than of the degree of wage centralisation itself. Their first indicator is an index of involvement in wage bargaining by peak-level union and employer confederations (with scores ranging from 1 to 11). The second is an index of government involvement in the wage setting process (with scores ranging from 1 to 15). The third is a summary index of the overall degree of wage centralisation (with scores ranging from 1 to 4). The Golden-Wallerstein-Lange index is not a pure centralisation index but includes elements of wage coordination. It is the only index taking government-imposed centralisation and coordination explicitly into account. Golden et al. make own assessments of the centralisation of wage bargaining in individual countries and in this respect their approach is similar to the OECD's and Iversen's.

Another property of wage bargaining is the degree to which it is subject to coordination. Coordination can be defined as a mechanism to increase the consensus between the participants in the collective bargaining. The degree of coordination reflects the extent to which individual wage settlements are in tune with one another. Or in other words, the extent to which "minor players deliberately follow along with what major players decide" (Kenworthy 2001b, 75).

Coordination and centralisation of wage negotiations are not identical. Coordination may occur even though the negotiations are conducted decentrally. Coordination processes are complex. They can only be captured when both horizontal and vertical coordination are taken into account (Moene et al. 1993). Horizontal coordination aims at harmonising wage bargaining across distinct jobs and business activities. Vertical coordination seeks to make the rank and file follow the decisions taken by their representatives at higher levels. Apart from these dimensions of coordination activity it is important that the coordinating activities of the state should not be neglected (Traxler et al. 2001).

Based on a series of studies reflecting research in this area, the OECD has estimated the degree of coordination of wage bargaining in its member countries for the years 1980, 1990 and 1994 (OECD 1994a and 1997). The OECD assigned country scores of 1 (uncoordinated), 2 (medium degree of coordination) and 3 (highly coordinated). Ochel (2000) extended the OECD results to comprehend the period 1960 to 1999. The trinary assessment scheme does not do justice to the complexity of the coordination processes. Neither do these studies provide an explicit rationale for their coding, although many aspects of coordination have been taken into account implicitly.

The different dimensions of coordination are taken into account in OECD (2004b) and in Kenworthy (2001a). Both the dimension of vertical coordination as well as the coordination efforts of the state have their place in the classification of the wage negotia-

Table 6

Coordination of wage bargaining in OECD countries, 1995-2000

Country	OECD[a) b)] 2004	Kenworthy[a) c)]	Country	OECD[a) b)] 2004	Kenworthy[a) c)]
Australia	2	2	Korea	1	…
Austria	4	4	Netherlands	4	4
Belgium	(4.5)	(4.5)	New Zealand	1	1
Canada	1	1	Norway	(4.5)	(4.5)
Czech Republic	1	…	Poland	1	…
Denmark	(4)	(3.5)	Portugal	4	…
Finland	5	4	Slovak Republic	2	…
France	2	2	Spain	3	…
Germany	4	4	Sweden	3	3
Hungary	1	…	Switzerland	4	4
Ireland	4	5	United Kingdom	1	1
Italy	4	4	United States	1	1
Japan	4	5			

… Data not available.

a) Figures in brackets are period averages in cases where at least two years differ from the period's modal value.

b) 1 = Fragmented company/plant bargaining, little or no coordination by upper-level associations.
2 = Fragmented industry and company-level bargaining, with little or no pattern-setting.
3 = Industry-level bargaining with irregular pattern-setting and moderate coordination among major bargaining actors.
4 = a) informal coordination of industry and firm-level bargaining by (multiple) peak associations;
b) coordinated bargaining by peak confederations, including government-sponsored negotiations (tripartite agreements, social pacts), or government imposition of wage schedules;
c) regular pattern-setting coupled with high union concentration and/or bargaining coordination by large firms;
d) government wage arbitration.
5 = a) informal coordination of industry-level bargaining by an encompassing union confederation;
b) coordinated bargaining by peak confederations or government imposition of a wage schedule /freeze, with a peace obligation.

c) 1 = Fragmented wage bargaining, confined largely to individual firms or plants.
2 = Mixed industry- and firm-level bargaining, with little or no pattern setting and relatively weak elements of government coordination such as setting of basic pay rate or wage indexation.
3 = Industry-level bargaining with somewhat irregular and uncertain pattern setting and only moderate union concentration.
4 = a) Centralized bargaining by peak confederation(s) or government imposition of a wage schedule/freeze, without a peace obligation (Belgium in most years, and Finland);
b) informal centralization of industry- and firm-level bargaining by peak associations (Italy, Netherlands, Norway in some years, Switzerland);
c) extensive, regularized pattern setting coupled with a high degree of union concentration (Germany, Austria).
5 = a) centralized bargaining by peak confederation(s) or government imposition of a wage schedule/freeze, with a peace obligation (Ireland, Norway in some years);
b) extensive, regularized pattern setting and highly synchronized bargaining coupled with coordination of bargaining by influential large firms (Japan).

Sources: OECD 2004 b; Kenworthy (2001 a) and Data set (www.u.arizona.edu/~lkenwor/WageCoorScores.xls).

tion systems. The OECD distinguishes nine different ways of determining wages, which can be summarised in five degrees of coordination (Table 6). In contrast to the OECD, Kenworthy does not measure wage coordination per se. His index with five categories "is instead a hypothesis or prediction about the degree of coordination that is likely to be generated by various wage-setting institutions… Because it focuses on the structural characteristics of the wage-setting process, it is considerably easier to measure than is the degree of coordination the process actually generates" (Kenworthy 2001b, 79-80). Nonetheless, even with such an approach it is necessary to test the hypotheses with respect to the degree of coordination.

Traxler et al. (2001) do not estimate the intensity of coordination directly. Rather, they seek to capture the coordination activities of the organisations actively involved in wage negotiations. Since these activities are qualitatively different from one another, they create a categorical coordination indicator. In their view there are six principal modes of coordination:

- inter-associational coordination by the peaks of unions and employer associations,
- intra-associational coordination by the peaks,
- pattern bargaining,
- state-imposed coordination,
- state-sponsored coordination, and
- uncoordinated bargaining.

Vertical bargaining governability is measured by the ability of higher-level agreements to impose wage moderation on the shop floor. Two types of rules are most conducive to vertical coordination: the legal enforceability of wage agreements and a peace obligation. Vertical bargaining governability is high when both these commitments are guaranteed effectively. Otherwise it is low. Vertical bargaining governability is present only as far as peak-level coordination is concerned. It is insignificant or pointless in the case of pattern bargaining, state-imposed coordination and uncoordinated bargaining.

Traxler et al. (2001) have analysed the effect of their coordination patterns on labour costs in a panel study. Peak-level coordination backed by high governability as well as pattern bargaining show the lowest increase in labour costs. State-imposed coordination (and uncoordinated bargaining) shows an average performance. Peak-level coordination under low governability leads to the highest increase in labour costs (Table 7).

Table 7

Bargaining coordination and wage moderation

Wage moderation			
Strong		Pattern bargaining	Voluntary peak-level coordination with high bargaining governability
Medium	Uncoordinated bargaining		State-imposed coordination
Weak			Voluntary peak-level coordination with low bargaining governability
	Low	Medium	High
Vertical coordination			

Source: Traxler et al. 2001, p. 247.

Social security and active labour market policy

Social security systems insure workers against the risk of unemployment and redistribute income in favour of the most disadvantaged workers (passive measures of labour market policy). At the same time, social benefits may reduce peoples' efforts to look for a job and increase the reservation wage, thus exerting upward pressure on wages. These effects may increase the duration of unemployment.

The degree of income maintenance and the financial work incentives are measured by the difference between out-of-work and in-work incomes. The ratio defines the so-called replacement rates. In calculating replacement rates several choices have to be made (Atkinson and Micklewright 1991). If out-of-work benefits are seen as an insurance system, then the numerator would be out of work benefit income and the denominator would be income from work of the person whose labour market status changes. If the living standard out of work as opposed to that in work is of interest, then in addition all other incomes that are independent of work status should be included in the numerator and the denominator. In this case a household concept would be appropriate. In addition one has to decide on the type of transition: from employment to unemployment or vice versa (or transitions into other labour market states). Finally gross or net replacement rates can be calculated, the latter being the more comprehensive measure (Immervoll and O'Donoghue 2003).

The best known net replacement rates (NRR) are those calculated by the OECD (2004a). They show

the proportion of in-work income that is maintained for someone becoming unemployed. They refer to persons who were previously employed on a full-time basis with earnings at 67, 100 and 150 percent of the average production worker wage. As indicators of net income, they capture the direct effects of all relevant types of taxes and benefits. Furthermore, NRR is calculated for different family types taking into account the household as a whole. Finally, to capture different durations and time profiles of out-of-work benefits, replacement rates are calculated for the initial phase of unemployment as well as for longer periods of joblessness (up to the 60th month of benefit receipt).

Although the OECD net replacement rate is one of the most carefully constructed measuring instruments, it has some shortcomings. It provides no information about the proportion of recipients of income replacement benefits for which a certain replacement rate is relevant. What is more, up till now certain groups of persons have not been included in the calculations. It would, for example, be an advantage if net replacement rates for economically active persons of different age groups would be calculated.

Net replacement rates and duration of entitlement alone are not decisive for the incentive effects of a benefit system. They have to be analyzed together with the eligibility criteria. Eligibility criteria restrict social benefits to people who meet requirements such as independent job search, attending interviews, accepting suitable work etc. They can be made effective by strict legislation and by sanctions. The strictness with which the benefit system is operated is described in MISSOC, OECD (2000, chapter 4) and Grubb (2001). Very little information on the implementation of sanctions is available. Incidences of refusal of benefits are shown in Grubb (2001, Table 2).

Net replacement rates and eligibility criteria represent the financial incentives to work for persons receiving income replacement benefits. In 1999, in 16 OECD countries 18.6 percent of persons of working age fell into this category. Net replacement rates provide no indication of the financial incentives to work for persons who are unemployed, but do not receive income replacement benefits. 21.3 percent of persons of working age fell into this category (OECD 2003, 175).

Besides passive measures, active labour-market policy measures (ALMP) are carried out in all OECD countries. The purpose of ALMPs is to provide active assistance to the unemployed, which will improve their chances of obtaining work. The ALMP is registered in terms of expenditure as a share of GDP, of the total budget for labour market policies, etc. Further indicators of ALMPs are the numbers of persons in active labour-market policy measures as well as people who join or leave these programmes. The OECD database on Labour Market Programmes is the most important source. However, it contains no time series that date back to the 1960s and 1970s. Also the departures from active labour market policies are not subdivided according to whether the persons have moved into non-subsidised jobs, into unemployment or into inactivity. This subdivision would allow conclusions to be made on the effectiveness of the ALMP (Eichhorst et al. 2001, 198).

Taxing labour

The tax burden on labour has substantial policy relevance. As opposed to the burden on capital income it has implications for the distribution of income. Furthermore, it affects the efficiency of the labour market, influencing both participation rates and unemployment rates. One way to calculate the tax burden on labour is the Taxing Wages approach of the OECD (2005). Taxing Wages seeks to determine the combined effect of personal income taxes, social security contributions and family cash benefits on the net incomes of various illustrative family-types and on the labour costs faced by employers. Information is provided on employees at comparable levels of income. The main focus is on the "average production worker". The calculations in Taxing Wages take no account of observed data.

The strength of the Taxing Wages methodology lies in its ability to make international comparisons of tax systems, without being affected by different population structures. However, it is limited by considering a restricted number of household types and a fairly narrow income range. Other limitations are the exclusion of taxes on the goods that workers consume, the exclusion of non-wage income and the limited numbers of tax reliefs covered. As social benefits are not included either, Taxing Wages is not the best source to analyse the incentive for individuals to participate in the labour market (Heady 2003).

The Taxing Wages approach is not the only way in which the taxation of labour income can be assessed. One alternative is to calculate the implicit average

effective tax rate, by estimating the total amount of tax paid on labour earnings in a country and dividing that by an estimate of total wages or labour costs (OECD 2001). Implicit average effective tax rates have the advantage of being based entirely on observed quantities, and thus reflect all the factors that influence the amount of taxes actually paid. Furthermore, they take account of the taxation of all workers. On the other hand, they do reflect a combination of differences in tax systems and differences in the population structure, which makes international comparisons of tax differences more difficult (Heady 2003).

Another alternative is to use a micro-simulation model to calculate labour taxes for a representative sample of a country's population. An example of this is EUROMOD (Sutherland 2001). Micro-simulation models can provide results for each of the households in the database that it uses. In principle, they can produce figures for the taxation of a broad range of incomes, although for high-income individuals information on tax deductions or tax avoidance is rarely sufficient. Similar to Taxing Wages the simulation of taxes paid does not take account of observed data.

The need for more information

The quantity and quality of information on formal labour market institutions have improved considerably in the last fifteen years. Nevertheless more information is still needed.

In the first place, there is a need for more and better information on areas of regulation which up till now have not been the object of systematic data collection. This refers to "new" areas of regulation like "opt-out clauses" that permit area-wide wage agreements to be set aside in favour of agreements at the plant level. Furthermore, it refers to areas that are not well documented. This applies, for example, to the decisions handed down by labour tribunals and arbitration boards with respect to employment protection and to severance pay. Beyond that, increasingly there are institutional areas that need to be the object of systematic data collection on account of their indirect effects. An example of this would be the system of experience rating in the United States and its effect on protection against wrongful dismissal. And finally, there are areas of regulation which have up till now not been subject to systematic data collection such as wage agreements, the internal arrangements of organisations and the eligibility requirements with respect to transfer payments. Sectoral and regional differences of institutional regulations should also be captured. An improved state of information in this respect could enhance the targeting of labour market politics.

Apart from the inclusion of new areas of regulation, implementation of institutional arrangements should receive more attention. The texts of laws and edicts do not tell us whether they are actually applied or not. One country's strict rules may be paired with lax enforcement, whilst another country's lax provisions may be applied with greater rigour. Information concerning the implementation of rules and regulations is often inadequate. An improvement would require that national administrative entities systematically collect information on their activities and make this information available to international organisations such as the OECD. International surveys could also help to improve the situation with respect to information availability.

Another aspect is the improvement of the methods employed to obtain information on labour market institutions. First of all, the theoretical concepts through which we examine institutions and their activities need to be further developed and applied. Second, the methods of measurement need to be improved. The measurement methods should meet, as far as possible, the criterion of functional equivalence. Whenever decentral assessments of institutional arrangements are undertaken, care should be taken that the national experts base their assessments on homogeneous criteria. Whenever the available data are insufficient, international surveys should be conducted. And, last but not least, in calculating composite indicators, a weighting scheme reflecting the significance of individual indicators should be employed.

Another topic of interest concerns the relevance of individual institutions. How many people make use of the services of an institution and how often do they do this? How many persons are affected by a given regulatory arrangement? Which set of persons is covered by a given indicator? The question of relevance is closely connected to the question of implementation: if a regulation or a regulatory arrangement is not implemented, then it is not relevant.

Furthermore, wherever possible, long time-series on the development of labour market institutions should be provided. These are needed for panel analyses and

to identify the extent to which individual institutions are changeable. Information on the possibilities of changing formal institutions is of great interest. Beyond that, one must attempt to determine the costs which would be incurred in modifying institutional arrangements and in overcoming the resistance to such modifications. Improvement in the availability of information in this area would require considerable preliminary research efforts.

Summary

The way labour market institutions have come into being and the effects that they have are aspects which have received a good deal of attention, but the collection of information on such institutions has been much neglected. Since the 1990s, however, thanks to the work done at the OECD and other international organisations and thanks to social science research, considerable progress has been made. The concepts underlying the collection of information about labour market institutions have been developed further as has been shown with the examples of employment protection, wage setting institutions, social security and ALMP, and taxation of labour. The methods of measurement have also been improved.

Nonetheless, the need for information is still far from being completely satisfied. The systematic collection of information is still not adequate in many areas of regulatory activity. There is relatively little information on the implementation of regulations. Concepts and methods of measurement must be further developed. In addition, information concerning the relevance of institutional arrangements is needed. And finally, the inertial resistance of institutional arrangement to change requires study.

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