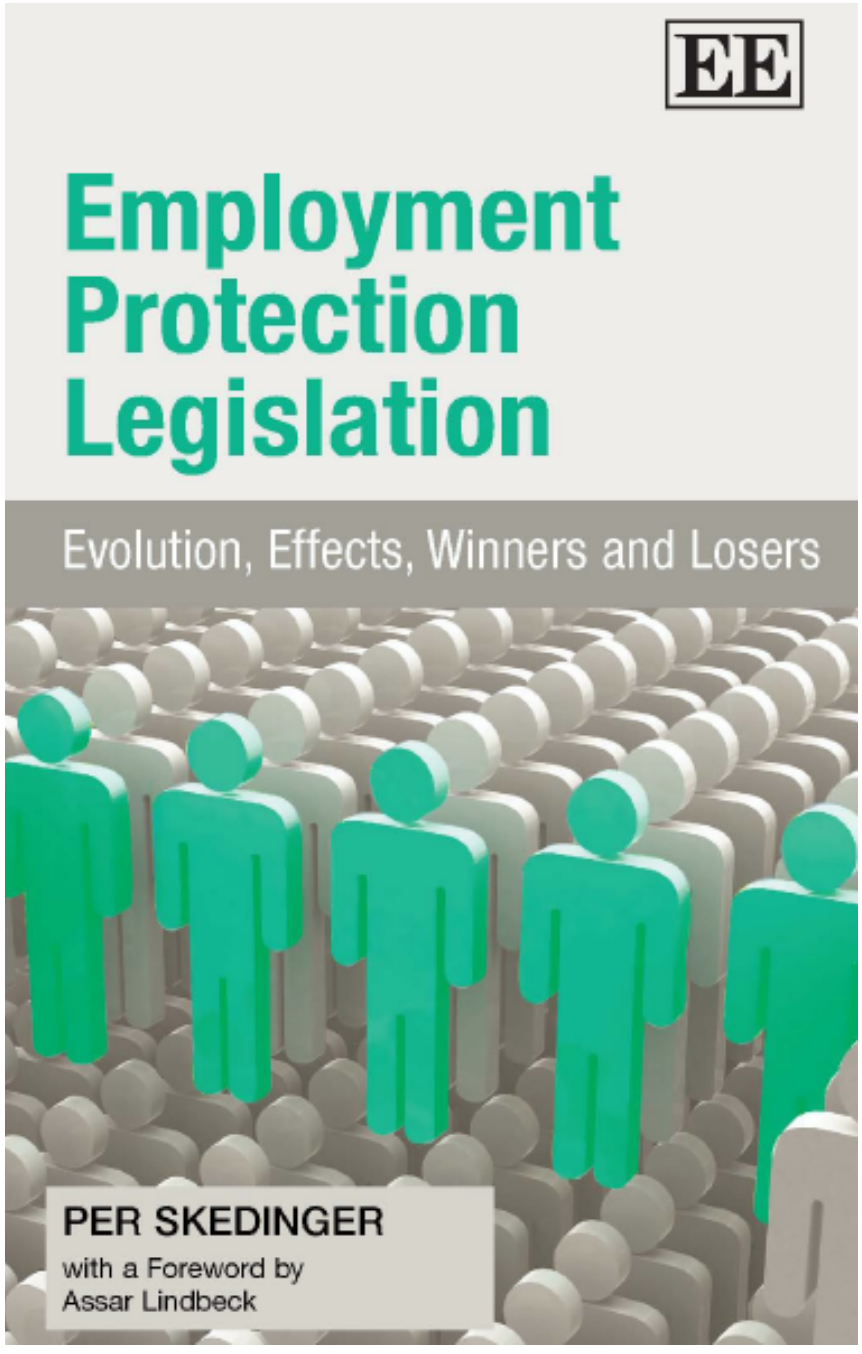

Employment Protection Legislation

Evolution, Effects, Winners and Losers

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Foreword

In the real world, labor markets are always segregated in a number of ways. For instance, as a result of various types of turnover costs for workers, those who already have permanent jobs, the 'insiders' in the labor market, are privileged as compared to others. This is the case, in particular, when comparing with workers with temporary jobs, unemployed workers and new entrants in the labor market, hence the 'outsiders' for short.

The turnover costs come in several different forms. It is costly for firms to search and scrutinize new hires as well as training them for firm-specific tasks. There is also considerable uncertainty about the abilities of newly hired workers. Moreover, insiders can protect their positions from wage competition from outsiders by threatening not to cooperate with entrants who get jobs by underbidding existing wages, and possibly also by threatening to harass them at the workplace or during leisure time. These various types of labor turnover costs create market power for insiders, and this power can be used to push up wages above the wages at which outsiders would be happy to get job offers (outsiders' reservation wages). Unions are also able to accentuate these market powers of insiders.

In most countries the government has further raised the market power of insiders by various types of employment protection legislation. The purpose has usually been to stabilize employment and income for labor-market insiders – as a complement to social insurance such as unemployment insurance and early retirement pensions. While most observers agree that such legislation does increase employment security and income security for insiders in the short run, there is considerable controversy about various types of side effects of the legislation.

In this book, Per Skedinger gives an excellent and balanced survey and evaluation of both the theoretical prediction and the empirical research about the consequences of legislated employment protection. His empirical exposition relies on three different types of studies – cross-country studies based on aggregate data; cross-country studies using disaggregate data; and within-country studies mostly based on disaggregate data. He finds the last type of studies more reliable than the cross-country studies based on aggregate data.

Since employment protection tends to reduce both the firing and the hiring of labor, it is natural that theoretical predictions of the effects on aggregate employment and unemployment are ambiguous. However theoretical studies also predict that job-security legislation tends to increase the duration of both spells of employment and spells of unemployment, and that aggregate short term fluctuations in employment are reduced. By and

large, Skedinger finds that these predictions are consistent with the empirical evidence. However he also suggests that there are strong distributional consequences of job-security legislation in the sense that individuals with permanent employment are favored relative to groups such as immigrants, the young, the long-term unemployed and disabled individuals. Unfortunately, there are hardly any studies about the long term effects on aggregate unemployment when new generations of youngsters and immigrants find it difficult to enter the labor market.

I would add that the aggregate effects on employment and unemployment differ depending on the actual macroeconomic situation. During periods of high employment, with modest and regular business cycles, we would expect that strict employment protection tends to stabilize aggregate employment. By contrast, in the case of a deep and long recession, with great uncertainty about the timing of the subsequent recovery, a strict employment protection legislation would rather stabilize high unemployment. Hence, legislation that may be favorable for aggregate employment in 'normal' times may be problematic during deep and prolonged recessions with large uncertainty about the future macroeconomic path.

On the basis of the empirical studies surveyed, Skedinger also argues that the dynamics in the economic system, on balance, suffer from strict employment protection, presumably because re-

allocation of labor becomes more costly for firms. There is also some evidence that, on balance, productivity growth suffers.

We should be grateful for Skedinger's comprehensive survey and evaluation of the literature in the important field of employment protection.

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Senior Research Fellow, IFN

Author's preface

Why write a research overview dealing with employment protection and its effects? My reasons are twofold.

First, the number of studies on the effects of employment protection has grown considerably during the past few years and no comprehensive, up-to-date survey of the research literature has been available in English. Out of the more than one hundred studies surveyed in this book, half date from the period 2006–09.

Secondly, labor markets have changed in ways that make questions of employment protection more pressing than before. Increased globalization and rapid technological innovation place demands on the ability to adapt for both businesses and employees, while permanent high unemployment in many European countries has made it difficult for vulnerable groups to attain a foothold in the labor market. The challenges of the current and worldwide recession have brought issues relating to employment protection to the forefront on the policymaking agenda and they are likely to remain there for years to come.

A Swedish edition of this book was published in 2008 by SNS Förlag, as *Effekter av anställningsskydd: Vad säger forskningen?* The English version has

been updated with the most recent information on the stringency of employment protection across countries and includes several new studies on its effects.

Writing this book, I have accumulated debts to many people. Magnus Henrekson provided continuous encouragement and support during the several stages of the evolution of the book and also commented on the text. I owe a debt of gratitude to Bernard Gazier, Bertil Holmlund, Assar Lindbeck, Martin Olsson and Arvid Wallgren, who read the manuscript in its entirety and made detailed suggestions for improvement. Their views, of course, need not necessarily coincide with my own. I have also benefited from comments and helpful suggestions from Lars Gellner, Maria Hemström, Lars Jonung, Oskar Nordström Skans and Stefano Scarpetta. My editors at Edward Elgar, Julie Leppard, Matthew Pitman and Laura Seward, deserve special thanks for help and encouragement. I wish to thank Aron Berg, Johan Egebark, Daniel Hedblom, Fredrik Hesseborn and Niklas Kaunitz for excellent research assistance. Johan also generously commented on different versions of the manuscript. Obviously, any remaining errors and unclear points are entirely my own. Finally, financial support from Jan Wallander och Tom Hedelius Stiftelse is gratefully acknowledged.

1. Introduction

'Priors help interpret evidence, but ultimately it is evidence that ends scientific debate'.

Richard B. Freeman (2005, p. 142)

Most countries have some form of employment protection legislation, but its strictness varies a great deal across countries. Employment protection tends to be more stringent in Southern and Continental Europe and the Nordic countries than in Anglo-Saxon countries. Over time there also have been tendencies for increased stringency in some Anglo-Saxon countries – notably the United States, albeit from a low level – and for liberalized regulations in some regions – mainly Southern Europe and Nordic countries.

The primary purpose of the legislation is to give employees protection from the fluctuations in earned income which are normally created in the labour market, for example, loss of income due to losing one's job. The regulation typically imposes limitations on the employer's ability to fire employees and to use temporary workers. The single most important element in the legislation is the definition of 'unfair' dismissal (or dismissal without 'just cause') and the penalties imposed on employers for such dismissals.

An immediate consequence of employment protection is that the employer's costs are raised for adjusting the size of the work force and its composition. The need to adjust the number of employees depends primarily on changes in demand for products and services of the company, while the composition of personnel may need to be altered if the employees are unable to perform the work for which they were hired. Typically there is a need for adjustment during economic downturns or if new recruitment has been shown to function below expectations. Adjustment costs can also give rise to a number of consequences in economy-wide aggregates such as employment, unemployment, structural change, wages, productivity and growth. This means that employment protection can have important effects on welfare and national finances.

It is often argued that globalization and technological development have contributed to increased demands on the ability of the labour market to adapt. Globalization means increased international competition, both in trade in goods and services. To the extent that technological change has brought about an increased importance of innovative industries – where demand is much less predictable than in other industries – demands on the ability to adapt has also increased. A rapid conversion to new products and industries places great demands on the adaptation ability of firms and employees, while at the same time there is a legitimate need for a safety net for those workers who are adversely affected by the changes.

Employment protection in the public discourse

Against the background of these sometimes conflicting interests, it is hardly surprising that the players in the labour market deploy numerous resources in order to influence legislators and the electorate regarding how employment protection should be designed. While industrial spokespeople often opine on the need to liberalize regulations, unions have traditionally been positive towards stringent employment protection. Common perceptions among those involved in the public debate include the notion that less stringent employment protection would lead to higher employment (the side typically taken by employers), that secure employment unequivocally would make employees more productive (the unions), and that employees perceive greater job security in countries with strong employment protection (the unions).

In some countries with relatively stringent employment protection attempts at reforming the system have provoked turmoil. In Italy, the Berlusconi government proposed a reform package in October 2001 that included measures to replace compulsory reinstatement of unfairly dismissed workers with financial compensation from the employer. The proposal met with massive protests which culminated with the murder of government advisor and legal expert Marco Biagi. The reform plans were shelved as a result of the ensuing political turmoil (Sá, 2008). In France, a proposal was launched in early 2006 allowing employers to lay off young employees without

just cause and compensation during the first two years of an employment relationship. Students and unions organized large demonstrations and protest actions against the proposal and it was withdrawn in April 2006 by then President Jacques Chirac (*The Economist*, 2006).

The manifestations of discontent exemplified above may be extreme, but show that even relatively marginal reforms of employment protection may carry heavy political costs. Even so, employment protection legislation has become more liberal in many European countries since the 1980s. However liberalization has, with few exceptions, been concerned with regulations of temporary (or fixed-term) contracts, while regulations of permanent contracts have largely remained intact. This reform strategy may be explained by the fact that the political opposition to reforms has been stronger among the more well-organized groups of workers with permanent employment, while marginal groups with less political influence are over-represented among temporary employees.

In the public discourse, the so-called flexicurity model is often advocated as a means of combining flexible hiring and firing rules for businesses with income security for employees. One of the model's proponents, the EU Commission, argues that 'more and better jobs' can be achieved through relaxing employment protection legislation in countries where it is strict and making unemployment benefits more generous in countries with inadequate social security systems (EU Commission, 2007).

Despite the many different views taken by the various sides in the public debate regarding employment protection they have one common element: they all depend on research results to promote their agenda. Normally their choice of studies is selectively based in favour of their own opinions, and the quality aspects of the research are seldom considered. In addition, the research field has expanded so that it is ever more difficult to survey. Therefore there is an urgent need to attempt to consider as broad and unbiased a view of the research as possible on the effects of employment protection.

The state of research

Since the 1980s unemployment in the United States has tended to be lower than in Europe. Much of the earlier research can be seen as attempts to discover the extent to which this can be explained by weaker employment protection in the United States. For the past few years, the number of studies in the field has increased dramatically and the spotlight has also been focused on areas other than just employment and unemployment. Among other effects previously overlooked, there is the impact of employment protection on productivity, worker absenteeism and perceived job security. There is also increased attention on the distinction between permanent and temporary employment and possible consequences of differentials in the stringency of regulations regarding the two types of employment contracts.

Within the research, several more basic questions also have been raised related to the effects of employment security. Why do we have employment protection mainly regulated by law and to a much lesser extent by voluntary agreements between workers and employers? Why are the regulations different in various countries and why are the differences relatively stable over time? Towards answering these questions, it is important to note that the evaluation methods have improved, as have access to and quality of the data, which has resulted in more reliable and valid findings. It thus seems timely to articulate an overview of the new international research results to a much broader public.

The aim of this book is to present and critically discuss international research in this field. To this end, it is important to ask oneself how the results should be interpreted, since they vary according to the way in which the studies were carried out, and their application to particular countries is not always obvious. The goal has been to emphasize clear results whenever they appear, to identify areas where they are lacking and to formulate questions for further study. This overview examines both theoretical and empirical works, with emphasis on the latter, since the theories involved in most cases lack unequivocal predictions.

What does the research have to say regarding the connection between employment protection and the way the labour market operates? What justification is there behind the various ideas

which are raised in the public debate? A thorough study of the empirical research points towards several central conclusions.

First, the evidence that aggregate employment and unemployment are affected by such regulation, whether positively or negatively, is relatively weak. There is a great deal of evidence which indicates that both dismissals and hirings decrease at approximately the same rate.

Secondly, there is a much stronger basis for the conclusion that the distribution of employment and unemployment are affected by the way that employment protection is designed. Employment prospects are strengthened for those who already are securely placed in the labour market, while the opposite holds for vulnerable groups, especially the youth. Employment protection therefore works as a regressive redistribution mechanism on the labour market, that is, those who are better off are favoured at the expense of those who are in a more precarious economic situation. This result should be of special importance within the policy debate in countries where distributional issues have been given great prominence.

Thirdly, many studies indicate that productivity decreases as a result of strong employment protection, probably due to slower structural change and decreased work intensity among the employed, for example, through increased worker absenteeism. Some studies suggest that job training increases with more stringent employment protection, which should contribute towards higher productivity.

However the evidence in favour of the hypothesis that decreased risk for job termination due to stringent employment protection will make employees more productive on the whole is definitively not strong. Productivity may also be affected as the share of temporary employees increases, which seems to be a common response to the one-sided European reform strategies. Temporary workers have weaker incentives to undergo job training than permanent employees, but work effort may be positively affected if this enhances the probability that the temporary position is converted to a permanent one.

Finally, it appears to be difficult to prove that employees in countries with stricter employment protection actually perceive greater job security or psychological well-being. One possible explanation is that not only is there a lower risk of being fired, but also fewer chances of finding a new position if one has lost the previous one.

An overview of the research thus reveals that the evidence is not all that strong regarding many of the cherished and most visible notions in the public discourse surrounding employment protection. At the same time, the results point to distributional aspects which are rarely noticed. The research results raise questions as to how a reasonable and just balance can be struck between flexibility and employment protection. Does the law need to be reformed? The bulk of present regulation in many European countries was created many decades ago, when the labour market was

substantially different. For example, unemployment, even among those in vulnerable groups, was lower. Are there alternative ways to create security in the labour market than the laws regarding employment protection which we have today?

The organization of the book

In order to provide a clear background to the questions raised by the research, Chapter 2 describes the design and evolution of employment protection regulation in industrialized countries. There are great differences across countries in the strictness of their regulations and these differences seem to be relatively constant over time – but there is tendency towards convergence in stringency since the 1980s. This chapter also discusses the degree to which regulations are differentiated regarding various kinds of businesses or groups within the labour market and the variation which may arise due to labour courts enforcing employment protection laws differently, for example, during economic highs and lows. Some countries, like Sweden, have far-ranging optional laws, allowing parts of the regulation to be set aside by mutual consent of employers and unions. An important issue is to figure out to what extent available measures of employment protection capture the apparent complexity of legislation.

Chapter 3 discusses the potential effects of employment protection as identified in the theoretical literature. Among other things, these

concern employment and unemployment, personnel turnover, structural change, wages and productivity. Not only can aggregate employment and unemployment be influenced, but also its distribution among various groups in the work force. According to theory, it is not possible to determine a priori in which direction most of the effects go; employment, for instance, may go up or down as an increase in firing costs not only discourages firings, but also makes employers less inclined to recruit new workers. Therefore empirical studies are absolutely necessary to determine the net effect. As far as labour market dynamics is concerned however, theory delivers a clear message: more stringent employment protection should result in fewer hirings and firings, less job creation and job destruction and fewer entrants and exits among businesses. As a result employment should become more stable over the business cycle.

The theoretical predictions above come with an important proviso: if wages are adjusted downwards in response to more stringent employment protection, employers' total costs need not necessarily rise. This may entail that many of the effects of employment protection are smaller than what they otherwise might have been, or even non-existent. The welfare effects, dependent upon all of the above-named factors, can be both beneficial and disadvantageous in an unpredictable manner.

There are also theoretical results highlighting the risks associated with the present reform

strategy to liberalize regulation for temporary contracts, while leaving more strict regulation for permanent jobs unchanged. The employer may then have an incentive to fire temporary workers even if they are productive, since they would otherwise become permanent employees with high firing costs. This can lead to excessive employee turnover and increased unemployment, which can counteract the advantages of increased flexibility. If temporary workers perceive that there is little chance of their contract being converted to a permanent one, there are few incentives for job training and increased work effort, which ultimately is detrimental to productivity.

Research that attempts to explain why legislation concerning employment protection exists in the first place is discussed in Chapter 4. The explanations are closely related to the effects of employment protection. When the effects are favourable for both workers and employers, the existence of these laws must be explained, as private contracts between the two parties would have otherwise arisen spontaneously.

In the literature on employment protection, some kind of market failure, for example, an incomplete insurance market, is tagged as the reason behind the need for legislation, which can then fill the void and safeguard the employees' protection from income risks in the labour market. Alternatively, explanations can be derived from politico-economic models. Workers with permanent jobs can force through legislation, due to the

strength of their majority, which is beneficial to themselves but may have adverse consequences for vulnerable groups and for capital owners. Neither of these theories can explain, however, why the stringency of employment protection legislation varies across countries. One attempt at explanation looks at various legal traditions – English, French, Scandinavian, and so on – which have had differing and long-term repercussions on the degree to which employment protection laws are used to regulate the labour market.

Empirical results on the effects of employment protection legislation are discussed in Chapter 5. The overview includes over one hundred studies since 1990, about half of which are from the last few years; a development which reflects the increasing interest among researchers in issues related to employment protection. The studies have mainly focused on industrialized nations, but a handful of studies dealing with developing countries are also included.

The different studies have been grouped according to the kind of data used: (1) cross-country studies using aggregate data; (2) cross-country studies using disaggregate data; and (3) within-country studies (mostly using disaggregate data). The division has two motivations. The possibility of asserting that the effects under study actually are effects of employment protection – and nothing else – differs across the various types of studies. This is important because other labour market institutions or country-specific circumstances in

general may also influence the outcomes under study.

In the first group, which includes most of the older studies, it is mainly cross-country variation in the stringency of employment protection that is used for identification of the effects. In Groups (2) and (3), the data are disaggregated according to individual, company, industry or region. The possibility of identifying the effects are generally the least in (1) and greatest in (3). In the second and third groups, partial reforms of employment protection are also studied. By the design of these reforms, suitable control groups arise naturally inasmuch as certain groups on the labour market or certain firms are not included in the reforms.

Another reason for the division is that it, to some extent, has implications for the types of effects that are possible to analyse. In Group (1) aggregate effects are studied for employment, unemployment or productivity, while the other two groups allow analysis of whether the effects differ between various industries or groups within the labour market.

Chapter 5 shows that the results in Group (1) regarding the effects of employment protection on aggregate employment and unemployment are rather mixed. There is more consensus regarding effects on the distribution of employment and unemployment; vulnerable groups, especially the youth, tend to be at a disadvantage. In Groups (2) and (3), the results are not all that clear regarding aggregate effects, but the picture regarding distributional

effects gains even greater substantiation. The studies in these two groups also indicate that more stringent employment protection leads to less dynamics in the economy. Employee turnover is reduced by fewer firings and hirings, while structural change also goes more slowly due to less job creation and destruction, while exits and start-ups of firms are also reduced.

The studies in Groups (2) and (3) also give some support for negative effects on productivity. Why productivity appears to be lower is not entirely clear, but it might be because structural change goes more slowly or that there is less work effort among the employed. In Group (3) there are a number of studies which show that worker absenteeism increases when stricter employment protection regulation is in place. Absenteeism probably leads to lower productivity. There are also studies showing that workplace education increases, which ought to contribute to greater productivity.

In the final section of Chapter 5, an account is given for the relatively new research which makes use of survey data in order to examine how employment protection influences perceived security in the labour market, which is an important factor when assessing the welfare effects of the regulation. The effects related to labour market security are not given, since both the risk of being fired and the chance of finding a new job after job loss are diminished. In studies in Group (2), where individual data for many countries are used, the

results demonstrate a weak or even negative connection between the strictness of employment protection regulation and perceived job security, even among those who have permanent jobs. The results are similar to those found in Group (3), where a partial reform of the regulation of permanent positions in Spain has been examined. The volume of research in this area is not great, but the results we do have show that there are reasons to question whether employment protection – in its present shape in many European countries – is an effective solution to the market failure which an incomplete insurance market creates.

The studies in (2) and (3) show that the effects are often conspicuously diverse in different industries, different kinds of companies and among different groups in the labour market. It was not possible to detect these effects in the aggregate studies which earlier dominated the literature. One thing that all these studies have in common is that few results are available regarding the effects on wages. Wage effects are rarely discussed in the general debate, yet are of great importance for both the welfare of the employee and for how the company's costs for employment protection are influenced.

In Chapter 6, there is a comprehensive evaluation of the research results which have been surveyed. Evaluating this large number of studies, which have been done using various methods and at various points in time, is naturally a delicate task. A certain amount of subjectivity is hard to

escape when such a large research area is being tackled.

Employment protection appears to function as intended in that the risk of being fired is reduced. But this seems to come at a price in the form of higher thresholds to the labour market for vulnerable groups and a diminished utilization of resources in the economy. At the same time, many studies show that the perceived security in the labour market is not necessarily higher in countries with strong employment protection.

One gap in the research is that the actual implementation of the legislation in the courts and its effects have hardly been studied – this is the 'black box' of employment protection. Some recent studies have looked into the regional allocation of judges and the propensity for pro-worker judgments within countries in order to isolate the effects of differences in implementation. This strand of the literature is still in its infancy. As far as optional regulations are concerned – which in Sweden are frequently used and imply that it is possible to deviate from the actual letter of the law in collective agreements – there is even less research. Information on how optional regulations work in practice is still all too limited in order to make more definite conclusions on how they influence the workings of the labour market.

The overview in Chapter 6 shows there is both a concordant view and continued uncertainty in the research regarding the effects of employment protection. Many important pieces of the puzzle

are missing for evaluating the welfare effects or suggesting a direction for policy reform. For instance, the measures of employment protection tend to be highly aggregated, which gives relatively little guidance as to the specific components in employment protection that drive the effects. Nevertheless, I hope that the overview of international experiences will still prove to be useful for anyone interested in issues related to employment protection and its effects.

2. The design and evolution of employment protection legislation

Most countries regulate employment protection by legislation. The regulations imply that employers are restricted in their ability to dismiss employees, in their use of temporary positions or other aspects of the employment relationship. Employment protection legislation may be regarded as one of many so-called institutions on the labour market, that is to say, it creates a framework of regulated terms and conditions which tend to change very little over time. Among other institutions regulating the labour market in most countries, one can name trade unions, collective bargaining systems, designs of active and passive labour market policies and statutory minimum wages. There are great differences across countries in the way these institutions are formed, and this is also holds for employment protection.

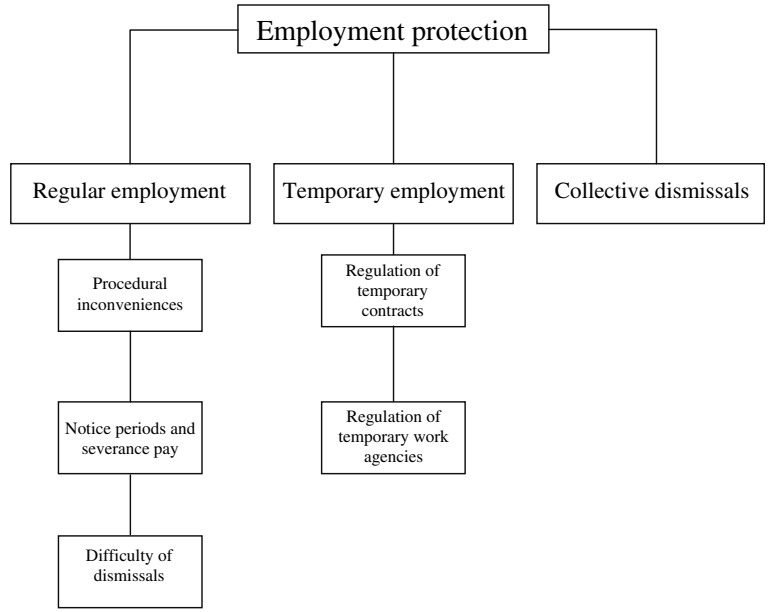
This chapter defines the various applicable areas regarding employment protection legislation, which are the same for many different countries. Next is described the evolution over time in the strength and differences across countries in employment

protection, using the OECD (Organisation for Economic Co-operation and Development) index. The chapter also considers the heterogeneity in regulation as applied to various groups in the labour market and various kinds of firms and to what degree this is captured by available indices. Finally, the implications of optional regulations in the legislation and the research concerning how far courts in various countries have ruled in employment protection-related cases depending on the state of the economy and legal capacity is discussed.

What is employment protection legislation?[1]

The various areas in the legislation operable in most countries can be presented schematically, as in Figure 2.1. Regulations can be divided into three different main areas, those regarding regular, or permanent, employment, those concerning temporary employment and those regarding collective dismissals. As for regular employment, the position is regarded as ongoing as long as no just cause for termination of the employment relationship exists. The restrictions may be divided into sub-groups such as procedural inconveniencies (from the viewpoint of the employer), time limits on notification and severance pay and the difficulty in hiring or dismissing employees.

Many procedural rules apply in the first subgroup under regular employment, including many of the measures which an employer must undertake from the period a decision to dismiss an



Source: Based on Table 2.B.2., "EPL summary indicators and weighting scheme", in OECD (1999, p. 118).

Figure 2.1 Employment protection legislation

employee is made until the moment the dismissal is completed. The dismissal procedure may be drawn out if, for instance, the employee must be given written notification or the employer is compelled to discuss or receive permission from a third party, such as a union or a government authority.

The second subgroup, notification and severance pay, includes more direct measures on the costs of a dismissal. The notification time is often given in number of weeks or months and typically increases with job tenure. Severance pay does not exist in all countries, but in the cases where it does exist, it is usually defined as a number of monthly

salaries, and, like notification time, it tends to increase with job tenure. The regulations regarding length of notification and severance are applicable to dismissals for just cause.

The difficulty in hiring/dismissing personnel, the third and last subgroup in the regulation of permanent contracts, is a summary concept for other restrictions regarding this type of employment. Here we have the main nuts and bolts of the legislation, namely the definition of 'just cause' for dismissal. Valid reasons may relate to the company's economic position or personal circumstances of the employee, for example, gross misconduct or neglect of work duties.

A dismissal can be declared 'without just cause' if the employer cannot show that he or she did take a reasonable amount of necessary steps to avoid dismissal, for example, an investigation as to whether there had been ways to find another position within the company for the employee or if it had been possible to give the employee more training. In addition, there may be regulations for how the choice among employees is made in cases where dismissals are due to the company's economic situation. Seniority, age or social circumstances of the employee can make up criteria which must be considered in such cases. If the regulations regarding just cause for dismissal are not followed, a court can decide on sanctions against the employer. The court can, for example, insist that the employer rehire the employee or award damages to the employee.

The second area of application in Figure 2.1 refers to rules concerning temporary employment. These positions tend to be tied to a specific date when employment will end and are in general not protected in the same way as permanent employment. Temporary employment gives more flexibility to the employer so that he or she can adjust the number of employees according to changes in demand and also makes it possible for the employer to evaluate the employee's abilities before a permanent position is offered, which decreases uncertainty in recruitment. In order to make sure that an employer is not circumventing strict rules for permanent positions by using temporary employment in an excessive manner, the use of temporary employment is safeguarded by a number of restrictions.

One of the most important restrictions regarding temporary employment covers the reasons which are valid for employing someone on a temporary basis. Usually project work, seasonal work and substitute work are seen as acceptable reasons. In addition to these reasons, temporary employment can be allowed in varying degrees; for example, the employer can receive the right to employ specific groups within the labour force on a temporary basis, especially youth or other new entrants to the labour market, but in other cases the employer is free from the need to state reasons for temporary employment. Concerning other important limiting regulations in this area we find the maximum number of temporary employment

contracts which can be made in succession and the maximal total time this employment form can be used by one and the same employer.

The possibility of using temporary work agencies, which hire out personnel to cover temporary high-volume work or for longer time periods, is often regulated in the same way as temporary positions. Legislation defines which kinds of work can legally be used from temporary hiring agencies and how many times a contract can be renewed and the maximum length of a contract by one and the same company.

As shown in Figure 2.1, the third and last main area covers legislated regulation for collective dismissals. If a dismissal is defined as collective, further restrictions are placed on the employer in comparison to the regulations already discussed concerning individual lay-offs. The reason behind this is that large numbers of dismissals may lead to greater social consequences, especially if these lay-offs are in a geographic area with high unemployment or limited alternative ways to make a living.

An important aspect of legislation is how collective dismissals are defined. This is generally decided by the number of employees affected and these limits vary from country to country. The extra restrictions which come into play during collective dismissals are that notice has to be given to a union or other work organization and to a governmental authority, such as the public employment service, and that the dismissal process is

further delayed. Requirements for talks with representatives for the employees may also apply. Moreover, the employer in certain countries may have to pay higher severance pay (than the average per employee with individual lay-offs) and also finance steps which facilitate the laid-off employees' transition to new employment, such as job-finding services and training.

Evolution over time

How can the stringency of employment protection be compared across countries? Legislation is complex, as should be evident from the overview presented in the previous section. Certain components in the legislation are relatively easy to quantify, such as notification time and severance pay, but others are more qualitative in character, like the definition of just-cause dismissals, and therefore it is more difficult to evaluate their significance. The cost aspects of the various components are central, since increasing costs for the employer lead to less demand for labour.

One way to get a summary view of the strictness of the legislation is to construct an index, that is, a measure that considers the legislation in its entirety by assigning weights to its various components. The OECD has constructed the most comprehensive index in this respect. This index considers regulations within all the main areas which have been mentioned in the previous section, namely regular employment, temporary

employment and collective dismissals. The index has a round number scale between 0 and 6, where the highest number represents the most stringent legislation.[2] The OECD has updated and enlarged its index continuously since the 1990s, both in regards to the components of the index and the number of countries included. The latest version refers to the conditions of the year 2008 and includes, besides the OECD countries, a selection of developing countries and transition economies (Venn, 2009).

The various indices of the OECD have come to play a great role in empirical research on the effects of employment protection. However as the index mainly considers industrialized nations the World Bank has created a (less extensive) index of employment protection which also includes many developing countries. In addition, a number of researchers have created their own alternative indices.[3] In order to further reveal the stringency of legislation, there is an index which is based on questionnaires to employers, carried out by the International Organisation of Employers (IOE).[4] Compilations done by the OECD shows a relatively high correlation between the OECD's index and most of the alternatives used, including the index of the World Bank and the IOE questionnaire (OECD, 1999; Venn, 2009).

All these indices are more or less explicit comparative evaluations of various components in the legislation, and such comparative evaluations inevitably include elements of subjectivity.

For instance, how should the importance of regulations concerning permanent employment be evaluated compared to regulations for temporary employment? How should the amount of severance pay be evaluated compared to the length of notification? There are no obvious answers to these questions.

Figure 2.2 shows the development of employment protection during the period 1950–2008 in various groups of OECD countries. This figure is based on Allard's (2005) extension backwards in time of the OECD's (2004) index for specific countries up to 1998 and on the OECD index for 1998–2008. As the series constructed by Allard excludes some components in the legislation that are considered by the OECD, figures for the two periods are not exactly comparable (as indicated by a vertical line in the figure). I have aggregated the countries into four groups, where the countries in each group have roughly similar levels of employment protection.

The four groups of countries in Figure 2.2 are Southern Europe, the Nordic countries, Continental Europe and the Anglo-Saxon countries. The stringency of employment protection varies greatly between many of the country groups and it has increased overall since 1950. However since the beginning of the 1980s, the level of employment protection has remained more stable.[5] In 2008 the average index of the six level scale ranged between 1.1 (Anglo-Saxon countries) and 2.8 (Southern Europe), whereas Scandinavia and

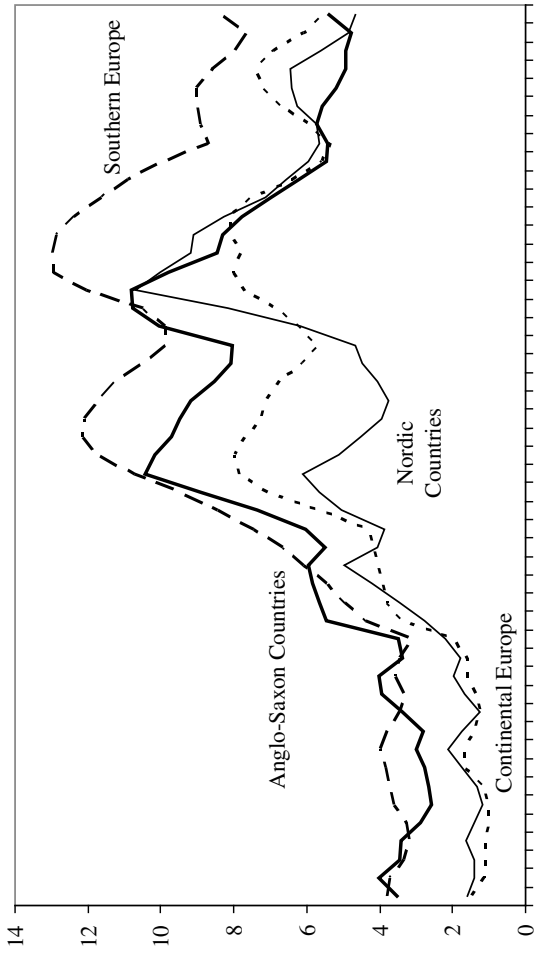
Note: The scale of the index is 0–6, where 6 represents the most stringent legislation. The series for 1998–2008 is based on OECD's index (version 2) for regular employment, temporary employment and collective dismissals. The series for 1950–1998 is based on OECD's index, excluding two components in regulations for regular employment, 'delay to start a notice' and 'compensation for unfair dismissal'. The break in the two series is indicated by a vertical line. Southern Europe = Greece, Italy, Portugal and Spain. Continental Europe = Austria, Belgium, France, Germany, Netherlands and Switzerland. Anglo-Saxon countries = Australia, Canada, Ireland, New Zealand, United Kingdom and the United States. Nordic countries = Denmark, Finland, Norway and Sweden. Author's aggregation of country data, unweighted averages.

Source: Based on Allard (2005) for 1950–1998 and on Online OECD Employment database (http://www.oecd.org/employment/protection) for 1998–2008.

Continental Europe show a similar level of employment protection (at about 2.2). There are tendencies towards convergence; since the beginning of the 1990s, legislation has become more liberal especially in Southern Europe and the Nordic countries, while employment protection in the Anglo-Saxon countries has become somewhat stronger compared to the mid-1980s. Otherwise the predominant impression is that the differences between the groups of countries are strikingly robust.[6]

Figure 2.3 shows unemployment levels in the same country aggregates during the period 1960–2008. As in the previous figure, a trend increase is noted up until the 1990s, with the exception of Anglo-Saxon countries where the rising trend is broken already in the beginning of the 1980s. Unemployment has usually been higher in Southern Europe than in the other groups. Excluding a short period during the 1990s, the Nordic countries have had low unemployment compared to other countries. The Anglo-Saxon countries show a relatively high unemployment rate during much of the period considered, but since the mid-1990s they have had a lower unemployment rate than the other groups of countries.

Observations such as the ones in Figures 2.2 and 2.3 have given rise to a discussion among researchers regarding to what degree increased unemployment in Europe can be explained by stringent employment protection. A certain



Note: See note to Figure 2.2 for information about the countries included and the aggregation procedure.

Source: Based on OECD Labour Force Statistics under Labour from OECD.Stat Extracts (http://stats.oecd.org).

Figure 2.3 Unemployment in OECD countries, 1960–2008. Per cent of labour force

correlation, although far from perfect, between levels of employment protection and unemployment can certainly be drawn from the two figures. The question of possible cause and effect is complicated however, since, among other things, employment protection became stricter at least a decade before the strong rise in unemployment took place in the mid-1970s.

How stringent is employment protection in individual OECD countries? This can be seen in Table 2.1, which shows both the OECD's summary index and their separate indices for regular employment, temporary employment and collective dismissals. The information refers to 2008 and includes, in addition to the 'old' OECD countries in Figures 2.2 and 2.3, Japan and the new member countries in Eastern Europe, Asia and Latin America. In addition, information is provided for a number of OECD non-members, including developing countries and relatively recent EU members (Estonia, Bulgaria, Lithuania and Slovenia) or EU candidates (Croatia). The indices for Bulgaria, Croatia and Lithuania have been computed by the ILO according to the same basic methodology used by the OECD.

The United States, Great Britain and Canada have the least stringent legislation according to the summary index (ranging between 0.9 and 1.1), while Turkey, Luxembourg, Mexico, Spain and Greece have the most extensive (3.0–3.5). An important change in American legislation since the 1980s is that an increasing number of states

Table 2.1 Stringency of employment protection legislation in OECD and other selected countries, 2008. Index

Country	Summary index	Regular employment (weight 5/12)	Temporary employment (weight 5/12)	Collective dismissals (weight 2/12)
OECD				
Australia	1.4	1.4	0.8	2.9
Austria	2.4	2.2	2.3	3.3
Belgium	2.6	1.9	2.7	4.1
Canada	1.0	1.2	0.2	2.6
Czech Republic	2.3	3.0	1.7	2.1
Denmark	1.9	1.5	1.8	3.1
Finland	2.3	2.4	2.2	2.4
France[a]	2.9	2.6	3.5	2.1
Germany	2.6	2.9	2.0	3.8
Greece	3.0	2.3	3.5	3.3
Hungary	2.1	1.8	2.1	2.9
Iceland	2.1	2.1	1.5	3.5
Ireland	1.4	1.7	0.7	2.4
Italy	2.6	1.7	2.5	4.9
Japan	1.7	2.1	1.5	1.5
Korea	2.1	2.3	2.1	1.9
Luxembourg	3.4	2.7	3.9	3.9
Mexico	3.2	2.3	4.0	3.8
Netherlands	2.2	2.7	1.4	3.0
New Zealand	1.2	1.5	1.1	0.4
Norway	2.7	2.2	3.0	2.9
Poland	2.4	2.0	2.3	3.6
Portugal[a]	2.8	3.5	2.5	1.9
Slovakia	2.1	2.5	1.2	3.8
Spain	3.1	2.4	3.8	3.1
Sweden	2.1	2.7	0.7	3.8
Switzerland	1.8	1.2	1.5	3.9
Turkey	3.5	2.5	4.9	2.4
United Kingdom	1.1	1.2	0.3	2.9
United States	0.9	0.6	0.3	2.9
OECD average	2.2	2.1	2.1	3.0
Other selected countries				
Brazil	2.3	1.5	4.0	0.0
Bulgaria[b]	2.0	2.1	0.9	4.1
Chile	1.9	2.6	2.0	0.0
China	2.8	3.3	2.2	3.0
Croatia[b]	2.7	2.7	2.8	2.5
Estonia	2.4	2.3	2.2	3.3
India	2.6	3.7	2.7	0.0
Indonesia	3.0	4.3	3.0	0.0
Israel	1.9	2.2	1.6	1.9
Lithuania[b]	2.8	2.9	2.4	3.6
Russia	1.8	2.8	0.8	1.9
Slovenia	2.8	3.0	2.5	2.9
South Africa	1.4	1.9	0.6	1.9

Notes:
[a] 2009;
[b] 2003.
The scale of the index is 0–6, where 6 represents the most stringent legislation. Unlike earlier versions, the OECD index (version 3) incorporates three additional components of legislation: 'the maximum time allowed for an employee to make a claim of unfair dismissal'; 'administrative authorization and regular reporting requirements for temporary work agencies'; and 'the requirement for temporary work agency workers to receive the same pay and conditions as regular workers at the user firm'. The index for Bulgaria, Croatia and Lithuania is based on the old version of the OECD index (version 2).

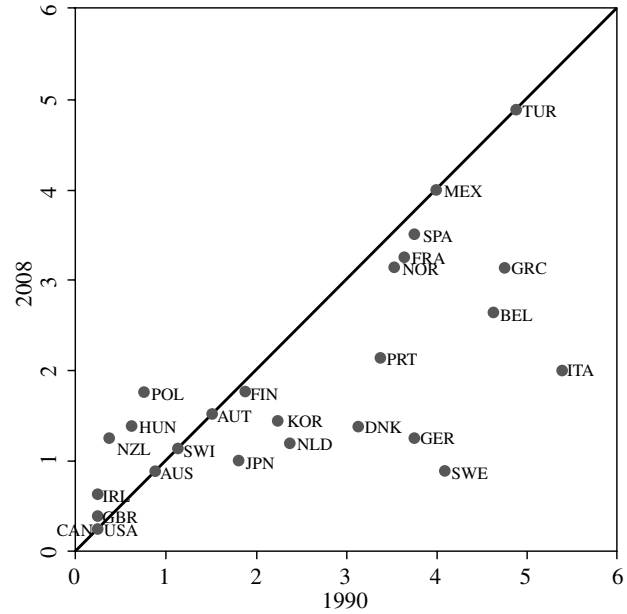
Source: Based on Cazes and Nesporova (2007) for Bulgaria, Croatia and Lithuania, and on Online OECD Employment database (http://www.oecd.org/employment/protection) for other countries.

(*Continued*)

have introduced the possibility for employees to have the question of just cause for dismissal tried in court. Even considering these changes as more restrictive, the United States is still the country ranked as the most liberal by the OECD as far as employment protection is concerned.

Among the Nordic countries, Denmark stands out with less stringent employment protection than her neighbours. Denmark is usually put forward as the prime example of the much-heralded flexicurity model, which combines flexible hiring and firing rules with generous unemployment benefits. However it is difficult to attribute the relatively low unemployment rate in Denmark since the 1990s to the flexicurity model, since the country experienced much higher unemployment in 1970s and 1980s with basically the same employment protection legislation (Andersen and Svarer, 2007).

In Figure 2.2, it could be noted that legislation was liberalized somewhat in some of the groups of OECD countries since the 1980s. Liberalization has not been equally distributed between the three main areas of legislation however, but has almost exclusively been related to rules for temporary employment. In Figure 2.4a, the strictness of legislation regarding temporary employment in 2008 (the vertical axis) is compared to the conditions during 1990 (the horizontal axis). In the lower half of the figure, countries which have liberalized their regulations during this period are shown, and most of the observations are found in this half. In contrast, the corresponding figure for regular employment (Figure 2.4b) shows a cluster of countries on or close to the 45-degree line, which means that no or very modest reforms have been undertaken. Portugal and Spain stand out as exceptions. In Portugal, a reform of dismissal

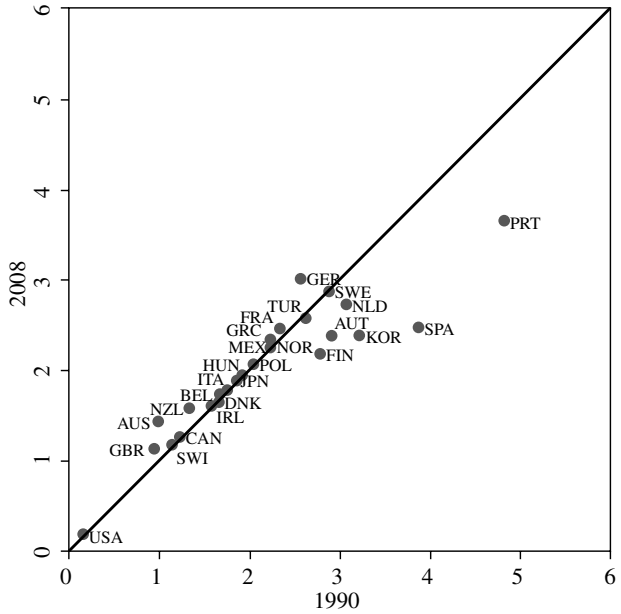


Note: The indices (version 1 of the OECD index) on the axes indicate the stringency of legislation at respective points in time. The lower half in the figure contains those countries which liberalized legislation in the intervening period. The vertical axis refers to 2009 for France and Portugal. The positions of Canada and the United States overlap exactly.

Source: Based on Online OECD Employment database (http://www.oecd.org/employment/protection).

Figure 2.4a Reforms of employment protection legislation regarding temporary work in OECD countries

regulations in 2009 involved, among other things, reductions of the delay before a notice periods starts and reduced notice periods for workers with short tenure. The reform was achieved with complementary reforms in social policy. In Spain, the definition of just cause for dismissal was widened



Note: See note to Figure 2.4.a for further details.

Source: See sources to Figure 2.4a.

Figure 2.4b Reforms of employment protection legislation regarding regular work in OECD countries

in 1994 and firing costs for certain groups of permanent employees were reduced in 1997.

A possible explanation for the fact that reforms were undertaken in so many parts of Europe may be that the legislation regarding employment protection, rightly or wrongly, was understood as a contributing reason for a persistently high unemployment rate, which led to political pressure to bring about change. The fact that the reform strategies were so one-sidedly biased vis-à-vis the

terms of temporary employment contracts can be due to political pressure from the noticeably larger and more well-organized groups with permanent employment.

Although liberalizations of employment protection legislation almost exclusively have concerned regulations for temporary employment, this does not necessarily imply that these reforms have not had repercussions on permanent employees. One hypothesis in the literature is that the reforms have strengthened the bargaining position of permanent employees in relation to marginalized groups, and thus have contributed to increased segmentation in the labour market.

Ochel (2008) discusses the political economy of one-sided (or two-tier) reforms in general and looks at the implementation of such reforms in European countries since the 1990s. Although reforms of regulations for temporary jobs avoid conflicts with key constituencies, a growing number of workers on fixed-term contracts may lead to increased support for lowering the protection of permanent jobs (as indeed happened in Spain in 1994 and 1997, after reforms of regulations for temporary jobs in the 1980s). If two-tier reforms are seen as an intermediate step towards a complete reform of employment protection, conversion clauses that limit the duration of a fixed-term contract could be introduced in order to overcome the resistance of incumbent workers and increase the political acceptance of reforms.

Are all equal before the law?

One shortcoming of available indices on employment protection is that they are only constructed for a 'typical worker' and provide little or no information about the coverage of the legislation, for example, to what extent regulations differ for different types of firms or workers. The methodology used may be understandable from the point of view of practical concerns, but it also means that the picture of employment protection is far from complete.[7]

A potentially important omission in this respect is that information is lacking about the extent to which small firms are exempted from employment protection legislation. One rationale for having more liberal rules for small firms is that these firms are more sensitive to the cost-increasing effects of employment protection than larger firms. This may be due to fixed costs of employment protection being divided among fewer employees and a smaller potential for spreading risks. There may also be reasons for not exempting small firms, for example, if growth of small firms is impeded due to incentives not to cross the size threshold where exemptions do not apply, or if it is believed that the special interests of small firms are already provided for in the actual implementation of the legislation by the courts (as has been argued in the Swedish case by Ahlberg et al., 2006).

Exemptions from employment protection legislation for small firms are widespread in OECD countries, but the size threshold varies across countries as does the extent to which small firms are exempt. Details on exemptions for small firms in 19 OECD countries are reported by Venn (2009).[8] Blanket exemptions apply in Korea (for firms with less than 5 employees), Germany (less than 11 employees) and Turkey (less than 30 employees). Exemptions in Italy (less than 15 employees) concern reinstatement and compensation requirements in case of unfair dismissals, while in Sweden exemptions are more modest, as only seniority rules are loosened somewhat in the smaller firms (with less than 11 employees). The number of workers affected by the exemptions, as a share of total employment, varies from 20 per cent in Korea to more than half in Australia, Spain, Italy and Turkey.

Is the regulatory framework different for different groups in the labour market? In Spain, youth and older workers are treated differently in the legislation regarding dismissals. It also seems to be relatively common to differentiate between blue- and white-collar workers and to impose stronger employment protection for the latter group (OECD, 1999). In many countries, apprentices, participants in training or labour market programmes and disabled workers are exempt from legislation (although anti-discrimination laws still apply). According to Venn (2009), few workers are affected by these targeted exemptions, typically less than 2 per cent of the labour force.

In most countries, the period of notice and severance pay (if applicable) increase with job tenure. In practice, this means that young people, who tend to have shorter tenure than others, are less protected than other groups. Seniority rules are also likely to have a differential impact depending on age and should contribute to increasing the probability of dismissal for young workers. In Sweden, the seniority rules also stipulate that the youngest worker should be dismissed first if tenure is the same for two workers (Rönnmar, 2006). A rationale for differentiation according to age is that young persons have a smaller opportunity cost than older persons for not being employed, for example, when taking part in education (Belot et al., 2007).

Since some groups are over-represented among those with temporary employment it is clear that regulations in this respect also have a differential impact across workers, even though the legislation may not be explicitly treating these groups differently. While a temporary job may be a stepping stone to permanent employment, there is also a risk for the creation of a dual labour market, with a core of permanent employees holding relatively secure jobs and a large group of workers circulating between temporary jobs and periods of unemployment. Workers with a temporary contract typically have less employment protection than permanent employees.

Table 2.2 displays the share of temporary employees in 2008, of those in dependent employment, by

gender, age group and educational attainment (for 2000). Females, youth and the less educated (with few exceptions, notably the United Kingdom) tend to be employed on temporary contracts to a larger extent than other groups. Temporary employment is especially prevalent in Spain, affecting about 30 per cent of all employees and 58 per cent of young workers. Also in France, Germany, Poland, Portugal, Sweden and Switzerland more than half of young employees have temporary contracts. Anglo-Saxon countries tend to have the lowest incidence of temporary employment, both in general and among the youth.

Table 2.2 does not reveal whether there are other underlying, individual characteristics, besides gender, which explain why the probability of having a temporary position is higher among women than among men. Wallette (2004) controls for a number of such characteristics, like education and tenure, in a study on Swedish data and finds that the gender gap disappears. He also finds that foreign-born are more likely to hold a temporary contract than Swedish-born workers, after controlling for other individual characteristics.

Figure 2.5 shows the unemployment rate among youth, relative to that of 25–54-year-olds, during the period 1983–2008 for the same aggregate of countries as in Figures 2.2 and 2.3. No clear relationship between the strength of employment protection and the rate of unemployment among the youth compared to older individuals in the various country groups can be discerned. There is

Table 2.2 Incidence of temporary employment, by gender, age and educational attainment, in OECD countries, 2008. Per cent of dependent employment

	Gender		Age			Educational attainment[a]		
	Females	Males	15–24	25–54	55–64	Low	Medium	High
Australia	5.9[b]	4.5[b]	4.5[b]	5.4[b]	4.6[b]			
Austria	9.1	8.9	34.9	4.5	3.0	21.9	4.2	5.7
Belgium	9.7	5.9	27.2	6.0	3.6	10.3	8.7	8.1
Canada	12.7	11.9	27.2	8.8	9.5	15.4	14.5	10.6
Czech Republic	9.8	6.5	15.6	5.1	14.1	14.0	7.2	9.5
Denmark	9.5	7.8	23.0	5.9	4.3	18.9	8.5	5.9
Finland	18.8	11.3	39.7	12.5	6.9	17.9	20.5	13.9
France	15.4	13.1	50.7	10.7	5.9	16.3	15.2	13.0
Germany	14.9	14.3	55.3	9.7	4.7	29.5	9.2	9.1
Greece	15.4[c]	11.2[c]	28.2[c]	11.3[c]	8.5[c]	17.7	12.1	9.4
Hungary	7.0	8.7	20.0	7.1	5.0	10.7	6.4	4.6
Iceland	9.9	9.1	27.8	6.0	2.8			
Ireland	9.5	6.7	20.1	5.8	5.5	11.5	8.4	8.1
Italy	16.4	12.1	44.7	12.0	6.4	10.2	9.6	11.3
Japan	21.0	8.7	26.0	10.6	14.6			
Luxembourg	6.8	8.4	39.9	5.6	1.0	3.2	3.7	2.9
Mexico	11.9[d]	24.9[d]	26.4[d]	17.9[d]	21.4[d]	26.3	12.7	9.4
Netherlands	20.0	16.7	45.2	13.2	7.1	17.1	11.7	10.2
Norway	11.1	7.0	25.5	6.7	2.9	11.1	9.4	9.7
Poland	27.7	26.3	62.8	22.7	21.8	13.9	5.6	2.1
Portugal	24.8	21.8	54.6	20.7	10.6	19.4	24.0	20.6
Slovakia	4.8	4.6	12.6	3.6	4.5	6.0	4.0	2.8
Spain	31.2	27.9	58.3	27.9	11.8	36.6	29.5	26.2
Sweden	18.7	13.4	53.8	11.6	6.5	17.9	14.0	13.4
Switzerland	13.2	13.4	50.5	6.6		30.0	5.9	8.6
Turkey	11.6	11.1	12.5	10.6	20.3			
United Kingdom	6.0	4.7	11.2	4.0	5.1	5.3	6.0	8.9
United States	4.2[e]	4.2[e]	8.1[e]	3.5[e]	3.3[e]	6.1	4.1	3.3
OECD countries	13.2	11.7	25.1	10.2	9.2	15.7	10.4	9.3

Note:
[a] 2000 (except 1997 for Canada and 2001 for the United Kingdom);
[b] 2006;
[c] 2001;
[d] 2004;
[e] 2005.

Source: Based on OECD Labour Force Statistics under Labour from OECD.Stat Extracts (http://stats.oecd.org) for gender and age, and on Table 3.3., "Incidence of temporary employment by individual and job characteristics, 2000", in OECD (2002, p. 138) for education.

Note: Relative youth unemployment is the unemployment rate for persons under 25 years of age relative to that of those aged 25–54 (except for Austria, where the relation is to total unemployment). New Zealand and Switzerland are excluded due to lack of data. See note to Figure 2.2 for information about the countries included and the aggregation procedure.

Source: See sources to Figure 2.3.

Figure 2.5 Relative youth unemployment in OECD countries, 1983–2008

a convergence in relative unemployment, from which only the Nordic countries diverge. In 2008, unemployment among the youth was about three times higher than unemployment in the older labour force in Southern Europe and Anglo-Saxon countries. It is noticeable that the European reforms concerning temporary employment during this period is not reflected in lower relative youth unemployment, with the possible exception of Southern Europe.

Implementation and enforcement

The legislative complexity regarding employment protection makes it difficult to capture the stringency of legislation in available indices. In addition, differences in the implementation and enforcement of the law make it harder to find a true picture of the situation. Judicial interpretations of certain legal regulations – for example, what constitutes a just cause for dismissal – are not easy to quantify and the inclination to go to court with a dispute involving employment protection can vary across countries. The laws can also be optional, that is, they can be set aside by contract, in collective bargaining or otherwise.[9]

Regarding judicial activity in employment protection cases, information exists for only a few OECD countries. Table 2.3 shows the number of incoming cases to the proper judicial authority, the number of cases judged which were won by the employees' side and average case length. In addition, information is given as to on which side

Table 2.3 Court cases in selected OECD countries

	Number of cases (per 1 000 employees within parentheses)	Percentage of cases won by workers	Length of the procedure	Burden of proof
Australia	7 700 (0.9) per year (average 1997–2002).	90% of all claims were resolved by conciliation and only 5% by formal arbitration. 57% of all formal arbitrations were resolved in favour of the employee.	Usually 6–7 months.	Employee.
Finland	17 (0.007) in 2002 (labour courts).	30% of all cases heard by courts.	Usually 6–8 months.	Employer.
France	92 000 (4) in 2001.	75% of all heard cases (average for all types of dispute).	About 1 year (average for all types of dispute).	Employer and employee.
Germany	265 000 (7) per year (average 1999–2002).		3–4 months on average.	Employer.
Ireland	650 (0.4) per year, or 1 000 (0.6) per year, depending on type of court (average 2000–02).	Up to 2/3 or 53% of all heard cases, depending on type of court.	2–6 months on average.	Employer.
Italy	3 864 (0.2) in 2001.	55% of all heard cases. A majority of cases were settled by the parties themselves, without being brought before courts.	About 2 years (average duration of lawsuits).	Employer (mostly).
New Zealand	First half of 2003: 3 600 (2), or 1 500 (0.8), depending on type of court.	About 50% of claims in last quarter of 2002, for which a determination was issued, were resolved in favour of the employee.	Determinations issued within 8 months of the application being made.	Employer, while employee has to supply prima facie evidence.
Norway	170 per year (average over a 12-year calculation period).	51% of all cases brought before courts in 2003.		Employer and employee.
Sweden	415 (0.1) applications received per year (Labour Court, average 2004–06). 124 (0.03) judgments passed per year (Labour Court, average 2004-06).	42% of "guiding decisions" among all judicial decisions. 47% of "guiding decisions" with explicit reference to Employment Protection Act in judicial decision.	1–2 years.	Employer and employee.
United Kingdom	42 000 (1.5) per year (average 2001–03), or 3 800 (0.1) in 2002/2003, depending on type of court.	In 2002/2003: 22% of cases went to a hearing in the Employment Tribunal (ET) and 44% of them were resolved in favour of the employee.	In 2002/2003, 86% of all ET decisions were issued within 4 weeks of the final hearing	Employer (mostly).
United States	4 708 (0.03), or 217 (0.002) in 2002, depending on type of court.	19% or 83% of heard cases, depending on type of court.	Average of 3 years or 182 days, depending on type of court.	Employer, while employee has to supply prima facie evidence.

Source: Based on Skedinger (2008) for Sweden, and on Table 2.1., "Preliminary evidence on court cases in selected OECD countries", in OECD (2004, pp. 68–69) and OECD Labour Force Statistics under Labour from OECD.Stat Extracts (http://stats.oecd.org) for other countries.

the burden of proof normally lies – the employer or the employee.

There are great differences across countries regarding the number of cases, which may depend upon differences in how these cases are reported. In many countries, it is common for the parties to settle the case prior to its coming before the court. Since court proceedings are often uncertain and long, often up to a year or more, there are incentives for the parties to reach an agreement via mediation or conciliation. The function of legislative systems under such circumstances is for the most part to define the threat which might come into play if the parties do not agree. More stringent employment protection legislation can also encourage the employee side to bring more cases to the courts (Bertola et al., 2000).

Also regarding the number of cases won by the employee side, there are differences in reporting across countries. Since approximately half of the cases appear to be won by the employee, in most countries, there is maximal uncertainty regarding the outcome for both sides. The final column in Table 2.3 is an attempt to classify which of the sides normally has the burden of proof. In this regard, there appears to be great variation across countries. In some countries, the employer must prove that he or she has taken steps to prevent a dismissal. In other contexts however, the burden of proof can be on the employee. One example from Sweden is the case when there is suspicion that a dismissal was due to feigned lack of work,

which is just cause for dismissal, and that it actually had been based on personal reasons (Iseskog, 1996). It then becomes the employee's task to prove that the termination was really on the grounds of personal reasons, after which the employer must show that the actual cause for dismissal was lack of work.

Few cases which reach the labour courts appear to be disputes where persons with temporary employment are involved, compared to their representation in the work force. This can most likely be explained by the fact that persons employed under this form are easier to fire when their employment contract has expired and that most of the disputes are settled by mediation. A further explanation may be that employees with temporary contracts have less access to assistance from union organizations in judicial procedures than permanent employees have (OECD, 2004).

Some studies have investigated whether variations in macroeconomic conditions, above all the state of business cycle, influence the implementation of legislation regarding employment protection. The manner in which an economic downturn could influence the attitude of judges is not necessarily clear. On the one hand, the negative consequences of a firing are probably more pronounced for an employee in times of recession. On the other hand, the firm may also find itself in a precarious situation and at the risk of shutting down.

By having access also to cases in which the parties come to an agreement by mediation,

Marinescu (2008) is able to control for the selection problems involved when only cases which have been settled in court are analysed. She finds that the British Employment Tribunals are more likely to rule in favour of the employee when unemployment is high, but only in cases where the employee is still unemployed.[10] If the employee has found another job in the meanwhile however, the aggregate unemployment rate has no importance. Since most dismissed employees have found another job by the time that the judgment is pronounced, the effect of unemployment on the likelihood of deciding in favour of the employee is negative.

In a similar manner, Marinescu (2008) also examines whether the aggregate risk of bankruptcy influences to what extent the employer side is favoured in judicial decisions. The results appear to support that this is indeed the case. She therefore concludes that the action of these courts indicate that they attempt to maximize the employee's and the employer's joint welfare. How much of these results that can be generalized to other countries is unclear however, in that Ichino et al. (2003) find a positive relationship between unemployment and the number of cases won by the employee side in Italy. This study also controls for selection of cases settled in the courts.

There are also studies exploiting exogenous variations across regions in judicial discretion, that is, for reasons unrelated to the labour market. Fraisse et al. (2009) find that more labour judges in France acts as a threat to employers by encouraging

their compliance with labour regulation and Okudaira (2008) considers the allocation of judges with 'pro-worker' or 'pro-employer' leanings to Japanese regions. These studies not only identify hitherto unexplored sources of variation in the stringency of the legislation, but also investigate the effects of these variations on the labour market.[11]

Another important aspect regarding the implementation of the law concerns collective bargaining and optional regulations. Sweden belongs to those countries in which the possibilities that a collective agreement can diverge from the legal regulations are especially far-reaching (Rönnmar, 2006). If legislation regarding employment protection is stricken from the contract in other countries, it appears to be the rule that this means even more restrictions in relationship to the relevant legislation (OECD, 1999; Venn, 2009). In many collective agreements, for instance in the United States, seniority rules are stipulated (OECD, 1999, and Kugler and Saint-Paul, 2004). If the coverage of the collective contract is low, which is the case in the United States, few people are affected by exceptions. Just as the decisions laid down by the courts appear to be influenced by the business cycle, so can the frequency and contents of those exceptions which can be considered optional be influenced by macroeconomic conditions. However little is known as to how far this extends.

Boeri and van Ours (2008) argue that variations across countries in the share of temporary

employees and shadow employment should be considered when assessing the stringency of the regulations for regular employment. They adjust the OECD index for regulations pertaining to permanent workers by taking these variations in coverage into account and find that the index for Southern European countries typically is reduced in relation to the index for other countries. However the estimates of shadow employment are probably uncertain by a wide margin and the share of employees in temporary jobs is likely to be affected by the regulations for permanent employment.

Venn (2009) argues that small-firm exemptions are not a major source of inaccuracy in the overall OECD index, although in some countries a large proportion of workers are affected by the exemptions. The perhaps most important omission in the OECD index is information on the actual enforcement of the legislation, a deficiency the index shares with all other available alternatives. The OECD has the ambition to incorporate some aspects of both judicial decisions and optional rules via collective agreements when compiling their index, but information of this kind is decidedly lacking.

The question is how accurate the OECD index actually is, considering the objective that they are supposed to measure the costs of employment protection legislation. The index on the strictness of employment protection may work well as a relative ranking of the countries involved. There is

hardly any doubt, for example, that the United States has more liberal legislation than countries such as Portugal and Spain. Apart from that, how useful are the indices which we have today? Among researchers, there appears to be some scepticism in this respect:

> Available rankings of employment protection [EPL] are too imperfect and imprecise to inform the debate on EPL reforms and cannot be used to monitor structural reforms in the labour market. [Bertola et al., 2000, p. 71.]

> In the process of looking at the effects of institutions, I have become less convinced that existing measures [of employment protection] fully capture what is going on. [Blanchard, 2006, p. 38.]

The need for improved indices therefore appears to be great, even if the OECD has already achieved a great deal in this area. The OECD's index, together with other indices, has formed the cornerstone in the research literature which mainly uses cross-country variation in order to identify the effects of employment protection. These and other studies are discussed more thoroughly in Chapter 5.

Notes

[1] This section is largely based on OECD (1999, 2004) and Venn (2009).

[2] It should be noted that the scale of the index is ordinal, not cardinal, which means that the only thing which can be read from a higher number compared to a lower one is that the legislation is more stringent. The same distance between two pairs of numbers on the scale (for example 4 and 3 compared to 3 and 2) cannot be

interpreted as if the difference in stringency is exactly the same between the two pairs.

[3] See, for example, Lazear (1990), Blanchard and Wolfers (2000) and Belot and van Ours (2004).

[4] One useful aspect with questionnaires given to employers is that they ought to have better knowledge than others regarding the costs of employment protection. As far as potential drawbacks are concerned, the formulation of the questions and the general state of the economy may influence the answers in a certain direction. There may also be problems with selection if the costs of employment protection influence the entry and exit of firms on the market. See, for example, the discussion in Harding (2005).

[5] This development may be contrasted to the deregulation of product markets, where the value of the relevant index has declined from around 5 to around 2 for 21 OECD countries during the period 1980–2003 (OECD, 2006).

[6] The division of the different groups partially coincides with various legal traditions: French (Southern Europe and parts of Continental Europe), German (parts of Continental Europe), Scandinavian and English (Common Law). Legal traditions have been put forward as a possible reason for pervasive differences across countries regarding employment protection and other labour market regulations in the literature (Botero et al., 2004). These results are discussed more thoroughly in Chapter 4.

[7] In fact, much of recent research on the effects of employment protection exploits the possibilities for identification that differential enforcement across types of firms provides. This literature is discussed in Chapter 5.

[8] Australia, Austria, Belgium, the Czech Republic, Denmark, Finland, Germany, Hungary, Iceland, Italy, Korea, Mexico, Portugal, Slovenia, Spain, Sweden, Switzerland, Turkey and the United States.

[9] Another potential problem is deficiencies in the legal system, making assumptions regarding the rule of law

questionable. This kind of problem is often pervasive in developing countries and will not be discussed further here.

[10] These courts include both judges and representatives of employers and unions.

[11] The results from these studies are discussed in Chapter 5.

3. What are the conceivable effects of employment protection legislation?

The effects of employment protection discussed in this chapter are taken solely from theoretical reasoning and are not based on empirical evidence, which will be presented in Chapters 4 and 5. The immediate consequences of employment protection are that the employer's costs rise for adjusting the size of the work force and its composition. The need to adjust the size of the work force is determined by the demand for the company's products and services, while the composition may need to be changed if the employee's competence or work effort is seen as insufficient. The adjustment costs can also give rise to a number of sequential effects on, for example, employment, unemployment, structural change, productivity and growth.

Firing costs not only decrease the employer's inclination to lay off an employee, but also his or her willingness to hire new recruits. The latter effect is due to the fact that the firm incorporates potential future costs in the case of a lay-off already in the hiring decision. With higher firing costs, greater uncertainty regarding the factors which

determine the size of the work force will make the company more reluctant to hire someone. For instance, it can be difficult to determine in advance how a new employee will fit in to a work group or an organization and how this employee will manage the company's routines, especially if the employee in question lacks earlier work experience. Industries which are characterized by large demand swings or rapid organizational or technological change can also be more reluctant to take on new hires if the firing costs are high.[1] The effects of these uncertainties are probably more pronounced in smaller companies, where the possibilities to spread the risks are more limited than in larger companies.

Taken together, the effects of a more stringent employment protection thus imply that employee turnover is reduced, since the flows in and out of the firms are smaller. One consequence of this is that average job tenures and unemployment durations are longer than in countries or sectors with less employment protection. Hence the net effect on employment and unemployment is theoretically indeterminate and depends upon which of the two flows dominates (Bertola, 1999).

Another theoretical prediction is that employment protection will dampen swings in employment and unemployment over the business cycle. During a downturn, fewer employees are fired with stringent employment protection, while during an upturn, not as many employees are hired. The various stages in the business cycle can in themselves exert an influence on the uncertainty factors

associated with hirings, which reinforces a disinclination to hire during economic lows. Lindbeck's (1993) analysis points to the possibility that employment protection has different effects depending on the stage of the business cycle and that unemployment can become permanent after a deep recession. Firms may become reluctant to take on new employees since they are uncertain as to how long the recovery will last. There are also some hypotheses which state that stringent employment protection has more negative effects on employment after macroeconomic shocks (Blanchard and Wolfers, 2000).

Employment protection can also influence the composition of the employed and the unemployed at given levels of employment and unemployment (Bertola et al., 2007). In principle, there should be the same fundamental mechanisms at work for all groups in the labour market, namely that both the likelihood of being fired and being hired is reduced. However employment protection is usually designed in a manner that can influence different groups in different ways (as discussed in Chapter 2). Periods of notice and severance pay usually rise with longer tenure, which raises the risk of lay-off for persons with short tenure. Vulnerable groups in the labour force are often over-represented among those with short tenure. In certain countries, there are also legislated seniority rules. Chéron et al. (2008) argue that high firing costs for older workers increase job destruction rates for young workers.

Furthermore, uncertainty concerning a potential employee's productivity ought to be more explicit in groups with limited work experience or where qualifications are not as easily verifiable as those of other groups (for instance, among immigrants with foreign education). Taken together, these factors speak for the possibility that vulnerable groups in the labour force, such as youth, immigrants, long-term unemployed and those with disabilities, are affected negatively by employment protection compared to other groups.

Up to now, the discussion has not considered the possibility that wages can be affected by employment protection. The effects on wages are ambiguous, however. On the one hand, wages can be reduced if employers demand compensation for higher firing costs (Lazear, 1990). In this case, it is far from certain that total costs for an employer increase with employment protection legislation. If total costs do not increase, then employment is also not affected. Collective agreements and minimum wages however can hinder wage adjustment to lower levels. According to some theories, there also may be an interaction between employment protection and other labour market institutions which influence wage flexibility.

On the other hand, wages can rise as a consequence of employment protection, to the extent that the bargaining power of employees is increased relative to that of employers. Higher firing costs can create a group of so-called insiders within the company (Lindbeck and Snower, 2001). These people

can have a relatively protected position, both in relation to other employees, who might have, for example, temporary jobs, and to those outside of the firm who might be willing to work for a lower wage than what the insiders receive. Certain components in employment protection legislation, such as notification times, severance pay and seniority rules, can improve the position of insiders and therefore drive up their wages. Wage inflation due to increased bargaining power of insiders should contribute to lower employment and higher unemployment. To the extent that employment protection reduces the probability of finding a job in case an insider is actually laid off, there is however also an opposing effect that serves to reduce wage pressure.

Employment protection can also influence productivity and growth through a number of mechanisms. First, there are effects operating through the dynamics of the firms. The number of newly created jobs and the number of destroyed jobs should be reduced as a result of higher firing costs. Fewer destroyed jobs imply that firms keep more employees in unproductive jobs. The net effect on the total number of jobs is uncertain, but job turnover ought to be reduced. This can lead to a slower pace of structural change, where the mobility of labour from contracting firms and industries to those which are expanding will slow down, with negative consequences for productivity and growth (Hopenhayn and Rogerson, 1993; Saint-Paul, 1997, 2000a).

In addition, firing costs can influence innovation in the economy, but in this case the predictions are ambiguous. On the one hand, innovation can be reduced, if companies, in order to avoid the risk of paying firing costs, become less eager to experiment with new technologies which are characterized by higher profits on average but also by a higher variability, that is to say, they introduce more uncertainty. On the other hand, the pace of innovation may increase if companies are more inclined to make investments which increase productivity in order to avoid expensive firings (Koeniger, 2005).

Secondly, there are productivity effects related to the fact that protected employees feel more secure in their jobs. With longer tenure and lower risk of being fired, the incentives for attaining firm-specific skills, which are not transferable to other companies, are increased (Belot et al., 2007). This enhances productivity as a result of increased human capital accumulation.[2] Employment protection can also increase incentives to co-operate with the company management, for example in connection to technological and organizational changes in the workplace.

Higher firing costs can also have quite opposite effects on productivity. The work effort of the employees may diminish since a lower risk of being fired also means that the personal cost for weaker effort is reduced. For the same reason, the costs for not co-operating with the management are reduced with stronger employment protection. Lower work effort can take many forms, for example, slower work pace or increased absenteeism.

Systems with seniority rules can also create dynamic effects which are adverse for productivity. A person who began his or her career in a productive position can be locked into a less productive job over time.[3] Productivity effects can also arise if higher firing costs lead to changes in the composition of the work force to the detriment of vulnerable groups or if the companies become more eager to use capital (machines and equipment) instead of labour in production (in both cases in the form of higher average labour productivity).

A common reform strategy in Europe has been to liberalize the rules for temporary employment, but to leave regulation for permanent employment intact. According to Blanchard and Landier (2002) and Cahuc and Postel-Vinay (2002), such policies can have negative consequences. Employers can be induced to fire temporary employees even if they are productive, since otherwise they would become permanently employed insiders, with higher firing costs. This can lead to an excess of employee turnover and increased unemployment, which can undermine the advantages gained through increased flexibility for the firms. The productivity effects appear to be indeterminate for temporary employees as well. The increased flexibility which temporary employment can give may increase productivity, but, as previously mentioned, productive employees may be let go too early and temporary employees have less inducement to invest in firm-specific skills than permanent employees. As hypothesized by Dolado and Stucchi (2008), the work effort of temporary

employees may be dependent on the perceived likelihood of the contract being converted to a permanent one. In firms and industries with low conversion rates, all else being equal, there may be few incentives for temporary employees to work hard and productivity is likely to suffer as a consequence.

In conclusion, one can say that the direction of most effects discussed in the literature is ambiguous. However some predictions are clear: the turnover of both personnel and jobs is reduced and the duration of both unemployment and employment is increased. It is also probable that the position of vulnerable groups is influenced in a negative manner. Theory cannot give clear-cut answers as far as aggregate employment and unemployment, wages and productivity are concerned, all of which involve several mechanisms operating in different directions. No direct link may exist between the effects on productivity and employment, which means that it is quite possible that the legislation regarding employment protection has no net effect on employment, but that it affects productivity.

Theory thus gives support to one of the basic reasons for employment protection, namely to hinder or delay firings. This can be useful for both employers and employees. However it is unclear what costs these effects are associated with, for example in the form of delays in the termination of unproductive matches between workers and jobs. In order to obtain more information of the various effects from employment protection, one must turn to empirical studies.

Notes

[1] In firms with a large work force, firing costs may be avoided by attrition, that is, workers retiring or resigning voluntarily for other reasons, on the condition that the need to fire employees does not involve a large number of them.

[2] High firing costs can also lead to the substitution of specific for general human capital, which can have a negative effect on productivity, especially in times of rapid diffusion of new technology (Wasmer, 2006).

[3] This presupposes that productivity at another firm would be higher, but not high enough for the firm to offer a wage that fully compensates for diminished security in the new job.

4. Why legislation?

A basic question is why legislation is necessary for achieving employment protection. The obvious answer would appear to be that the employee benefits from a lower risk of being fired and possible compensation when dismissed. Firing costs serve to smooth consumption over possible labour market states during the business cycle, such as employment and unemployment, which increases the utility of employees, since they are likely to dislike risk. But this explanation does not answer the fundamental question why legislation is necessary to accomplish this goal. One could imagine that employees and employers by means of voluntary contracts agree on a rule which would similarly protect the employees from being fired. During their most productive phases, employees could pay an 'insurance premium' in the form of lower wages to the employer and then be compensated by a higher income when the job is no longer as productive. If the employers' cost for employment protection, including potential effects on wages and productivity, is less than the utility the protection gives the employee in the form of increased security, one would think that such contracts would arise

spontaneously and without involvement from the powers of the state.

If employment protection legislation on the whole has beneficial consequences, there must be some kind of market failure to explain why it exists in the first place. A market failure can arise, for example, as a result of an incomplete insurance market. The employer can renege on the contract that stipulates higher compensation during the employees' least productive phase. In such cases, employment protection legislation can be a less costly alternative for the employee than bringing the employer to court. Pissarides (2001) shows that an optimally designed severance pay system does not need to reduce employment, given that the legislation does not bring deadweight costs in the form of judicial proceedings (which do not benefit the employees) and that the employee pays a premium in the form of a lower wage.[1]

One objection to this argument is that legislation was introduced in order to satisfy an insurance need to which the legislation itself contributed, in so far as fewer hirings and longer durations of unemployment lead to difficulties for dismissed workers to find new jobs (Saint-Paul, 2007). The existence of voluntary agreements in collective bargaining also indicates that the market failure is not universal.

Another kind of market failure is connected to the fact that collective dismissals can lead to negative social consequences for more people than just the dismissed workers – for instance in a small

town with weak employment prospects. Such costs will not be incorporated into any private contract between employer and employee, but will be shifted to the taxpayer. Firms can also be too quick during a downturn to get rid of the human capital represented by their employees, since such human capital to some extent is generally useful throughout the labour market and therefore less valuable to individual companies than for society as a whole (Booth and Zoega, 2003).

The above explanations for the existence of employment protection legislation take as their starting point that the legislation exists for reasons of efficiency and that it is a response to market failure. However there are also completely different explanations why employment protection legislation exists, where political and institutional factors play a role. One of these explanations is based on the idea that various interest groups attempt to influence the political system. Workers who may benefit from stronger employment protection typically make up a larger group in the electorate than the long-term unemployed and owners of capital, who might be against legislation; the former, for reasons of fewer employment opportunities and the latter, for reasons of lesser profit (Saint-Paul, 2002b). According to this theory, all democratic countries should have stringent regulation, which however is not the case.

In a number of works, researchers have attempted to find out why there are such large and relatively permanent differences across countries in

the stringency of employment protection (see Figure 2.2). Brügemann (2006) argues that both strong and weak protection can appear in equilibrium. He shows that certain workers remain in relatively unproductive jobs whenever regulations are strict and that these workers would be fired in case of deregulation. Workers in unproductive jobs thus benefit from the delay in firings which the legislation brings about. On the one hand, strict regulations in a given period will generate support among workers for strict legislation also in the future. Liberal regulations, on the other hand, would from the very beginning prevent any (large) group of unproductive workers from being protected from dismissal and therefore would not produce any support for strong employment protection from the side of the workers.

Anticipation by companies can be an explanation as to why legislation regarding employment protection can both be difficult to introduce and hard to eliminate (Brügemann, 2007).[2] If firms respond to a decision to introduce more stringent regulation by firing personnel before the law comes into effect and if the employees in affected companies can predict this reaction, the employees would be less eager to support such a change in the law. The fact that stricter laws regarding employment protection have a negative employment effect prior to the law coming into force also receives some empirical support in his study (with data from Great Britain and the United States).

There have also been empirical studies which try to explain differences in the strength of employment protection across countries. Belot (2007) shows that countries with higher costs for geographic mobility and with little economic diversification, also have more stringent legislation regarding employment protection.[3] One explanation for this result is that in countries where it is more difficult for workers to move from a region with a weak labour market to one which is more expansive, political support for stringent employment protection becomes stronger.

A study by Botero et al. (2004) starts from another position entirely: differences in legal traditions. The authors claim that countries with different legal systems use different instruments in order to regulate society. Common law, that is to say, the English legal tradition which has been created and developed through case law, upholds freedom of contract at the individual level to a much greater extent than in other systems. In addition to Great Britain, the United States, Canada, Australia and New Zealand, English common law has influenced former British colonies in Asia, Africa and the Caribbean. In contrast, the French legal tradition, *code civil*, builds more on regulation (*dirigisme*), since the judicial system is controlled by central authorities to a greater extent. This French legal tradition has influenced justice systems in Southern Europe, the Netherlands, Latin America and the former French colonies in Asia and Africa. The analysis also identifies countries with German,

Socialist and Scandinavian legal traditions. The latter can be said to have a position somewhere between common law and *code civil*. The optional aspects of, say, Swedish legislation regarding employment protection and the Labour Court's role as interpreter of such legislation resemble important aspects of the English legal system, but there is limited contract freedom at the individual level.

Botero et al. (2004) mainly test two hypotheses: first, that countries with common law systems have less stringent employment protection than other countries, and secondly, that countries with strong regulation in one area of labour market regulation also tend to have more stringent legislation in other areas.[4] The results, based on a sample of 85 countries, support both hypotheses. The legal tradition appears to be the most important explanatory factor behind country differences regarding regulation of employment protection and other aspects of labour market regulation, such as those relating to collective bargaining and the generosity of the social insurance system. The political colour of the government also plays a role, but does not appear to have the upper hand. A long period of left-wing political leadership in democratic countries seems to be connected to stronger employment protection, but even in dictatorships it seems that the specific and prevailing legal system is important.[5]

A shortcoming with the legal origin theory is that it is essentially static in nature. For example,

as pointed out by Deakin et al. (2007), the theory cannot explain the tendency towards convergence in employment protection that has occurred across legal systems since the 1980s.

The various explanations behind the reasons for employment protection discussed in this chapter are closely connected with the effects caused by the regulations. If legislation is an effective response to market failure, employment protection raises efficiency. If, instead, its reason for existence is due to special group interests or legal traditions, it is far from certain that efficiency increases, and it may even diminish. It should be noted that these explanations are not necessarily mutually exclusive. There is some evidence indicating that institutions and legal traditions do play a role, but it is much more difficult to establish to which degree efficiency considerations are behind the observed differences in employment protection in various countries.

Notes

[1] Pissarides (2001) discusses not just the question of why employment protection legislation exists but also draws normative conclusions regarding the optimal design of employment protection. Normative analyses in this area are rare, see Chapter 6 for further details.

[2] Neither Saint-Paul (2002b) nor Brügemann (2006, 2007) discusses the possibility that employees in the public sector make up an influential interest group. Their employment protection is fairly strong to begin with and they may also be relatively effective in influencing politicians.

[3] In order to handle the methodological problem that employment protection may influence mobility costs, the latter are measured by transaction costs for real estate. These costs, which were introduced long before employment protection, are assumed not to affect employment protection legislation.

[4] Product market regulations are not considered in the analysis.

[5] Botero et al. (2004) also study the effects of employment protection. These results are discussed in Chapter 5.

5. Empirical studies on the effects of employment protection legislation

Empirical studies on employment protection legislation consider a wide variety of effects. First, effects relating to labour market status (such as levels, inflows and outflows, and distribution across various groups in employment and unemployment status, personnel turnover and interactions between regulations regarding employment protection and other labour market institutions on the one hand and macroeconomic shocks on the other). Secondly, structural change (job reallocation and entry and exit of firms). Thirdly, productivity and growth (levels and growth of labour productivity and total factor productivity, GDP growth and more indirectly related factors such as worker absenteeism, training and location of firms). Fourth, wages (among workers in general or among insiders). Finally, effects of employment protection legislation on perceived job security have been studied.

As few studies were undertaken prior to 1990, this review comprises the period from 1990 to the present. The first issue within the empirical research on the effects of employment protection,

as in other empirical studies, is to what degree a relationship can be established between legislation and the various outcomes studied. The second and more fundamental issue is whether a relationship is causal, that is to say, if the effect under study is in fact caused by employment protection legislation or if there is just a correlation. In the latter case, there may be some other factor – unobserved by the researcher – which explains the outcome (and is a correlated with the stringency of employment protection legislation).

A relationship may be difficult to verify if the data are incomplete or weak. For example, if there are few observations with little variation or if available indices on the stringency of the legislation include measurement errors. Causal relationships – and especially the direction of such relationships – are often more difficult to establish. In addition to the presence of unobserved factors correlated with employment protection that influence the studied outcomes, reverse causality is also a possibility, namely that the outcomes also influence the design of the legislation. In such cases, it is difficult to establish the direction of causality. One example is that political pressure to introduce stricter employment protection may increase in times of high unemployment. The opposite situation – pressure to liberalize regulations during a recession – appears at least as likely if one considers the reforms undertaken in many European countries during the 1980s and afterwards (Holmlund,

1995). In the first case, the reverse causality implies that the effect of employment protection is overestimated. In the latter case, the effect is instead underestimated.

The various methodological aspects of the research motivate a division of the studies according to their design, since the possibility to handle the problems discussed above will vary according to the way the study was set up.

First, studies will be discussed which make use of aggregate data and cross-country variation in the stringency of the legislation in order to identify the effects. Most of the older studies fall into this category, but a few of the newer ones do as well.

Secondly, results will be presented from studies which differ from the first category in their use of disaggregate cross-country data, but in other ways have been set up in a similar fashion. The data are typically disaggregated by industry or firm or use individual-level data. There are somewhat fewer studies within this second group and most are relatively recent.

In both the first and second groups, some kind of index regarding the stringency of employment protection is used for the different countries, constructed by either the OECD, the World Bank or by individual researchers. In a few cases, employer surveys are used. Most often, these studies are based solely on data from industrialized countries, although some of the most recent ones add data from developing countries and

transitional economies in order to increase the number of observations. Since the rule of law can be questionable in developing countries, attempts have been made in many studies to control for this with specific indices.

The third and last group consists of studies of single countries. In these studies, the data are in most cases disaggregated by region or at the individual or firm level. Many of these studies are natural experiments, in the sense that legislative reforms have given various groups of individuals or firms special treatment. This means that outcomes can be compared for 'treated' groups to 'control' groups, which is an analytical advantage, since the potential for identification is improved. In these studies, the stringency of the legislation is not measured by an index; rather, firing costs are assumed to be a function of passing a size threshold, for example, whereupon the company becomes an object for different legal regulations. The number of studies within this group has greatly increased in recent years – it is now the largest of the three groups. Most of these studies consider industrialized nations, but a rising number of studies for developing countries have been undertaken.

The effects considered in these three groups do not entirely overlap. Naturally, studies of aggregate outcomes, like employment, unemployment, or growth, are easiest to make within the first group. In the other groups, a number of critical assumptions are needed in order to aggregate the

results to the national level. In order to analyse certain outcomes related to productivity in a meaningful way, the use of disaggregate data is necessary.

A separate, concluding section is dedicated to studies of perceived job security. These are all based on individual data, but are relatively few in number.

The main conclusions of the studies considered in this chapter are brought together in various text tables in the appendix. Some studies are mentioned only in passing. For more details regarding results, time periods, type of index used (if applicable) and countries considered, refer to the appendix.

Cross-country studies: aggregate data

In these studies, cross-country variation in the stringency of employment protection is the main basis for identification of the effects. The development within the field has gone from pure cross-country analysis towards increased use of panel data where variation over time is also considered.[1] Variation over time is usually rather limited however, since regulations tend to be rather stable across years, especially if the time period under consideration is short. Most of these investigations regard effects on aggregate employment and unemployment.

The effects in this section are discussed in the following order: (1) effects on aggregate

employment and unemployment, also heterogeneity in this respect across demographic groups; (2) interaction effects with other institutions in the labour market and with macroeconomic shocks; and (3) effects on productivity and growth.

One of the pioneering studies of the impact of employment protection on aggregate employment and unemployment is Lazear (1990). He uses data concerning notification time and severance pay for 22 different countries in the period 1956–84. According to the results, employment is lower and unemployment (including long-term unemployment) is higher in countries with more stringent employment protection. One of the problems in this study is that the measure of the strictness of legislation is relatively narrow. In a later study, Lazear's (1990) study has been expanded in several respects by Addison and Teixeira (2005). Among other things, they add more years and explanatory variables to the analysis, a more comprehensive measure of employment protection is used and various robustness tests are carried out. The authors conclude that unemployment increases in most of the estimates, but the results concerning employment and long-term unemployment are much weaker than in Lazear's study.

In addition to constructing indices on a regular basis regarding employment protection, the OECD has also produced a number of influential studies regarding its effects. Their conclusions have been modified over time. Scarpetta (1996)

and Elmeskov et al. (1998) analyse the effects on structural unemployment.[2] They find that unemployment increases with more stringent employment protection (the results are more robust in the latter study). The OECD (1999) uncover no relation however between employment protection and the level of unemployment and no strong connection for employment, but the flows into and out of unemployment increase, as does the duration of unemployment.[3] Similarly, Bassanini and Duval (2006) find no evidence that the stringency of legislation has any effect on aggregate unemployment. In the later OECD studies, the time periods considered are longer, the number of countries is greater and the index regarding employment protection is more comprehensive and with more observations over time in panel analyses (in the most recent one, yearly variation in the index is used). In addition, more robustness tests have been carried out.

The mixed results in the OECD studies concerning the effects on aggregate employment and unemployment are representative for the state of research in general among those studies which are based on cross-country aggregate data. On the one hand, there are a number of studies suggesting that employment falls or unemployment rises. See, for example, Blanchard and Wolfers (2000), Botero et al. (2004), Di Tella and McCulloch (2005), Feldmann (2003, 2009), Fialová and Schneider (2009), Heckman and Pagés-Serra (2000) and Nickell (1997). On the other hand, there are

studies indicating no effect at all, or that employment increases or unemployment falls. See, for example, Allard and Lindert (2007), Amable et al. (2007), Baccaro and Rei (2007), Belot and van Ours (2004), Cazes and Nesporova (2007), Garibaldi and Violante (2005), Griffith et al. (2007) and Rovelli and Bruno (2008).

As far as unemployment and employment in various demographic groups is concerned however, there are more results which indicate adverse effects on young people (and in many cases women). Allard and Lindert (2007), Bertola et al. (2007), Botero et al. (2004), Feldmann (2003, 2009), Heckman and Pagés-Serra (2000), Jimeno and Rodriguez-Palenzuela (2002), OECD (2004), Scarpetta (1996) and Skedinger (1995) all find that more stringent employment protection diminishes employment or increases unemployment among these groups. However there are examples of divergent studies where effects on employment possibilities for youth are either non-existent (Cazes and Nesporova, 2007; OECD, 1999), or even favourable (Amable et al., 2007).

A number of studies have looked at the issue whether stringent employment protection contributes to more people becoming self-employed. One underlying hypothesis is that self-employment facilitates entry into a regulated labour market if companies are more eager to engage the services of self-employed people than to employ personnel, in order to escape the effects of legislation. However a negative relationship between

self-employment and employment protection could exist if workers' valuation of the more secure salaried work increases in relation to self-employment. The empirical results are few, but varied. The OECD (1999) finds support for a positive effect on self-employment, while Robson (2003) uncovers a negative one, and Torrini's (2005) results are not robust. Robson (2003) argues that the results found by the OECD (1999) are caused by the inclusion of the agricultural sector.

Parcon (2008) is one of few studies that examine effects on foreign direct investment. She finds that firing costs contribute to less investment. As multinational firms become increasingly footloose with globalization of production and more open economies, it is conceivable that labour market flexibility will matter more in deciding firm location.

One hypothesis in the literature is that the effects of employment protection are stronger if wages cannot be adjusted downwards in order to compensate for the increased costs due to the legislation. If insiders have a strong bargaining position in the labour market, this can reduce the possibilities for the employers to shift the costs to the employees. Frequently it is assumed that wage demands from insiders have less impact in either decentralized or centralized bargaining systems than in systems where wages are mainly negotiated at the industry level and where co-ordination is limited (Calmfors and Driffill, 1988).

This hypothesis gains support in Elmeskov et al. (1998), who find that more stringent legislation contributes to higher unemployment only at the intermediate level of bargaining. The results in the OECD study from 1999 show that stronger employment protection reduces unemployment if the centralization and co-ordination levels are high (that is to say, the relationship is linear and not hump-shaped). The results of Bassanini and Duval (2006) suggest a hump-shape, but their findings are not robust. Belot and van Ours (2004), whose results indicate that employment protection has a negative effect on unemployment, also report results which suggest that this effect only comes into play when wage formation is decentralized.

A few studies have examined interactions between employment protection and macroeconomic shocks, in which the hypothesis is that more stringent legislation (and rigidity in other labour market institutions) has stronger negative effects on employment when the economy is subject to disturbances. This may explain why the stable differences in the levels of employment protection over time and across countries did not have any influence on differences in unemployment during the 1950s and the 1960s, but may have had influence thereafter. This hypothesis finds support in Blanchard and Wolfers (2000), who consider shocks in the form of changes in productivity, real interest rates and shifts in labour demand.

In a later study by Nickell et al. (2005), there are in most cases no significant interaction effects

(they also control for shocks in monetary supply and import prices). Jimeno and Rodriguez-Palenzuela (2002) study the interaction hypothesis specifically on young people and receive mixed results. Similarly, Bassanini and Duval (2006) find ambiguous results. Stringent legislation seems to dampen the unemployment-increasing effect in the short term in case of macroeconomic shocks, but prolongs the period required for unemployment to return to its previous level.

Belot et al. (2007) is one of the few studies considering the effects of employment protection on growth and their results indicate a hump-shaped relationship between the strictness of legislation and growth. An increase in employment protection from a low level leads to increased GDP per capita, but a reduction occurs with a high level of protection. The analysis in Allard and Lindert (2007) indicates a negative effect on growth in countries with co-ordinated wage bargaining. Nickell and Layard (1999) uncover a positive relation between productivity and employment protection, but only in countries which had relatively low productivity at the beginning of the period under consideration. The results in DeFreitas and Marshall (1998), using a sample of developing countries, suggest a negative effect of stricter employment protection in manufacturing industries. Koeniger (2005) reports mixed results concerning effects on R&D-intensity; it diminishes in countries with more stringent employment protection than other countries, but increases in

a specific country which makes its legislation more stringent over time.

The results in the various studies based on aggregate data point in different directions. It seems difficult to substantiate that there is a robust relationship between employment protection and aggregate employment or unemployment. The clearest findings appear to be that the flows into and out of employment and unemployment diminish, and that youth are adversely affected. Studies regarding other vulnerable groups, such as immigrants, appear to be scarce. There are also many results which suggest that interactions with other labour market institutions and macroeconomic shocks play a role, but the estimates are not very robust. Few studies research the effects on productivity and growth.

There are a number of methodological problems with studies of the kind reviewed in this section. Some of these difficulties were mentioned in Chapter 2, for example, the measurement problems in the indices of employment protection. Since the most comprehensive index (of the OECD) had very few observations over time up to about 2006, many researchers have constructed indices of their own. The use of these self-constructed indices is especially noticeable in the studies on interaction effects of macroeconomic shocks, where the question at issue requires long time series. The quality of these alternative indices is however sometimes questionable.

One of the most widely used indices has been constructed by Blanchard and Wolfers (2000). A shortcoming with this index is that two periods of time covering completely different aspects of employment protection have been linked together, partially from Lazear's (1990) earlier data regarding notification times and severance pay and partially from the OECD's later and more comprehensive index (see Howell et al., 2007, for a discussion).[4]

Another frequently used index has been launched by Belot and van Ours (2004). This index is less extensive than the OECD's, and it is not entirely clear how the index has been constructed. One particular aspect of this index is that the trends differ markedly from the pattern in Figure 2.2, that is, the stringency of employment protection diminishes from the end of the 1960s onwards instead of increasing.

In a few of the studies using cross-country aggregate data, employer surveys are used to measure employment protection (for example, Di Tella and McCulloch 2005), but these can also include sources of error (see the discussion in Chapter 2).

If the measurements of employment protection used contain substantial errors, the results are biased towards zero regarding the effects of the legislation. The effects of such measurement errors can be also be exacerbated in panel studies (with fixed effects). The fact that employment protection as a rule is just one of many labour market institutions under study may explain why relatively little

attention has been given to the quality of the data used. Most studies aspire to establishing that labour market institutions as a whole can explain unemployment and other labour market outcomes.

There are additional problems which can skew the results in various ways. These difficulties are not unique to the field of employment protection but also are relevant to other studies which use cross-country variation by means of aggregate data. First, there may be omitted variables, correlated with both employment protection and the dependent variable, which could distort the results. It can be especially difficult to appropriately consider circumstances which are specific to a certain period of time as well as being unique to a specific country. Two examples of this are the German reunification and the loss of Eastern trade in Finland at the beginning of the 1990s. However panel analyses with fixed effects can control for unobserved country-specific conditions which are not bound by a specific period of time.

There may also be other variables included, besides employment protection, which have been measured in a less satisfactory way. The other labour market institutions which are often included in these kinds of studies, for example, unemployment insurance and the wage bargaining system, are as multi-dimensional in character as employment protection and can be difficult to capture with the rough measurements which are normally used. This can make it extremely

difficult to interpret the results of interaction effects between employment protection and other labour market institutions.

Secondly, very few of these studies consider the potential problem caused by reverse causality. It should be noted that causality problems also may bear upon the more difficult-to-observe implementation and enforcement of the employment protection legislation, where many studies show that the state of the economy influences judicial decisions (see Chapter 2).

In addition, specific characteristics of labour market institutions tend to appear in clusters, which make it difficult to differentiate the effects of strict employment protection from, for example, effects of generous unemployment benefits or high coverage of collective agreements. To the degree that variation exists across countries in this regard, the number of available observations tends to be too small to cover all possible combinations.

Estimations based on aggregate cross-country data have frequently been shown to be non-robust, for the reasons discussed above, also in other contexts than studies of employment protection. A change of time period, the sample of countries, or the number of included explanatory variables may dramatically alter results for any given variable. Robustness tests are performed to a varying extent in the literature, but the perhaps most ambitious one in this respect, Baccaro and Rei (2007), find no effects of employment protection on aggregate unemployment in most of their specifications.

In addition, the comprehensive survey by Howell et al. (2007) demonstrates that the estimates in many of these studies are shaky.

Considering the many methodological problems associated with aggregate cross-country studies, it is perhaps not surprising that two leading researchers in the field, Richard B. Freeman and James Heckman – who otherwise have expressed rather different opinions on the role of labour market institutions – warn others not to draw too strong a conclusion from this research:

> [T]here is a road to improved knowledge. It is through developing more sophisticated priors about how people behave in institutional settings and how institutions interact in markets on the one side; and through analysis of the response of workers and firms to particular institutional settings in micro settings. It is not by continued regression mongering of weak cross-country data. [Freeman, 2005, p. 143]

> It would be more constructive to quantify the effects of the *entire edifice* of labor institutions on demand and supply of labor through their effects on a single measure – the labor cost schedule. All institutions affect costs and alternative institutions within an economic environment raise or lower costs. Once the incentives of protective institutions are properly measured, they can be used to estimate economic responses. [Heckman, 2007, p. 2]

> [T]he evidence currently in play in this literature is weak. [Heckman, 2007, p. 4]

Cross-country studies using aggregate data thus have weaknesses, but one of their advantages is that they make it possible to consider general equilibrium effects. Studies with disaggregate data do not easily give information on aggregate effects. A tentative conclusion from the research based on aggregate data is that employment protection legislation either has limited effects on most of the outcomes which have been studied or that methodological problems make identification difficult. However first we must consider outcomes based on other methods.

Cross-country studies: disaggregate data

There are many benefits to using disaggregate data, compared to aggregate data, in cross-country studies. The most obvious advantage is that effects which are hidden in aggregate data may be discovered. For example, this can be true if firms of various sizes, various industries or various regions, are affected in different ways. By using a richer source of information, problems caused by omitted variables can be mitigated. The problem of potentially endogenous employment protection legislation may remain however.

Also when using disaggregate data, one must usually rely on indices for employment protection, which can bring about the same problems as when using aggregate data. Often panel data are used, which make it possible to control for unobserved time-independent effects not only at the country level but also at, say, the industry level. Another advantage is that the possibilities of drawing more definite conclusions are better if one can identify, for example, industries where employment

protection legislation in all the countries considered can be regarded as more binding than in other industries. In such cases, outcomes can be compared not just across countries which have differing stringency in employment protection legislation, but also across different industries within the same country where such legislation is more or less binding.

The majority of studies within this still relatively unexplored area of the literature analyse effects of employment protection on job reallocation, firm dynamics and productivity. Only a few studies research effects on the level of employment.

Some studies examine job reallocation and its components, that is to say, the creation and destruction of jobs.[5] Job reallocation is substantial in all countries, but there are significant differences across industries (Haltiwanger et al., 2006). In this research area, the difficulties in finding comparable data have been considerable.[6] In some of the earlier studies, it has been observed that the aggregate reallocation of jobs is approximately equally as large in countries with differing levels of employment protection, which contradicts one of the few unambiguous predictions of the theory (see, for example, Bertola and Rogerson, 1997).[7]

In later studies, in which more comparable data are available, it appears however that the results are more aligned to theoretical predictions. Negative effects on job reallocation are found in Caballero et al. (2004), Gómez-Salvador et al. (2004), Haltiwanger et al. (2006), Messina and Vallanti (2007), Micco and Pagés (2006) and Salvanes (1997).[8] The results in Burgess et al. (2000) indicate that employment and production are adjusted more slowly in countries with stringent employment protection.

Furthermore, Messina and Vallanti (2007) find that stronger employment protection contributes to making job reallocation more pro-cyclical; that is to say, it increases more in upturns and decreases more in downturns. According to the authors, this means that employment protection above all reduces the sensitivity of job destruction to the various stages in the business cycle.

Many of these studies also report heterogeneous effects across industries and firms. Messina and Vallanti (2007) find that more stringent legislation contributes above all to less job destruction within contracting industries. The results in Haltiwanger et al. (2006) suggest that the negative effects of employment protection legislation on job reallocation are larger in industries with a low level of structural job reallocation. The reallocation of jobs in the United States, where regulations are the most liberal and assumed to influence reallocation the least, is used in order to identify industries with little structural reallocation. The authors find that midsize and large companies are affected more than small ones, which may be due to the fact that the latter in many countries are more likely to be exempt from employment protection regulation. Micco and Pagés (2006) in a similar manner use the premise that legislation is more

binding in industries with volatile demand (for example, the textile industry) in order to identify the effects. When they make a more standard regression no statistically significant results are obtained.

The entry and exit of firms is important for the growth of productivity in the economy (Haltiwanger, et al., 2006). Here Micco and Pagés (2006) and Scarpetta et al. (2002) find negative effects of employment protection. Both studies show that the number of new firms diminishes, while the latter one obtains different results depending on the size of the company. The legislation has no effect on the entry of the smallest firms (which are often exempt from legislation) or on the largest firms.

Multinational companies may also be affected by employment protection legislation. Javorcik and Spatereanu (2005) find that stronger employment protection reduces the flow of foreign direct investment into the host country. This is true both at a high absolute level of protection in the host country and if the level is high in relation to the employment protection of the country of origin. Gross and Ryan (2008) study Japanese firms and show that employment protection legislation has differential effects; stringent regulations for permanent employment decrease employment generated by foreign direct investment, while strict regulations for temporary employment increase employment. Using data for one American multinational food chain operating in 43 countries,

Lafontaine and Sivadasan (2009) find that employment is adjusted more slowly in countries with stringent employment protection. In addition, the company delays entry into such countries and operates fewer establishments.

The relationship between job reallocation and firm dynamics on the one hand and productivity on the other is not necessarily unequivocal. A number of studies therefore try to ascertain whether legislation regarding employment protection affects productivity. These studies examine effects both on the level of productivity and on its growth rate (see the appendix for details). Bassanini et al. (2009) and Scarpetta et al. (2002), find that more stringent legislation reduces productivity.[9] The first-mentioned study, like Micco and Pagés (2006), uses the assumption that legislation is more binding in some sectors. Bassanini et al. (2009) identify these industries as those with a relatively high structural propensity to adjust their work force through lay-offs, due to factors unrelated to employment protection. These factors include production processes and market-related forces. The results are driven by the stringency in regulations concerning permanent employment, whereas legislation governing temporary contracts has no effects on productivity. In Scarpetta et al. (2002), the effects on productivity are significantly negative, especially in countries where collective bargaining takes place at the industry level.

Acharya et al. (2009) argue that protection against dismissals could foster innovative activity

and their results indicate that stringent employment protection increases patents and citations at the industry level. The authors also find evidence that dismissal laws promote growth. However stringent labour laws in general – governing working time, employee representation and industrial action – seem to be detrimental to growth.

Only a few studies consider the effects on the level of employment and its composition. Micco and Pagés (2006) find that employment decreases with more stringent employment protection and that this effect is mainly due to fewer new firms, whereas employment in existing companies is not affected. D'Agostino et al. (2006) study employment in the service sector, but find little evidence to suggest that employment decreases due to stringent employment protection. The effects of employment protection on the employment of immigrants have been investigated by Causa and Jean (2007) and Sá (2008). Both studies differentiate between regulation for permanent and temporary contracts. Causa and Jean (2007) find that larger difference in stringency between the two increases employment among immigrants. The results in Sá (2008) indicate that, among natives, stronger regulation for permanent contracts decreases employment and regulation for temporary contracts increases it, while immigrants are much less affected in general. She argues that immigrants are less aware of employment protection legislation than natives and therefore less likely to claim their rights.

More stringent employment protection can lead to employers being more selective in their recruiting of new employees. Daniel and Siebert (2005) demonstrate that the educational level of new employees rises in countries with stronger protection (which may have repercussions on productivity). The results in Pierre and Scarpetta (2004) indicate that companies in countries with more stringent regulations concerning permanent employment provide more training to their employees and use more temporary employment, while Bassanini et al. (2005) find that such regulation decreases job training. Almeida and Aterido (2008) show that job training increases in less developed countries where stringent employment protection is enforced more strictly.

Kahn (2007) analyses the effects of employment protection on employment and the incidence of temporary employment in various demographic groups. According to his results, more stringent regulation reduces employment among youth and immigrants relative to other groups. If employed, it is more likely that women and immigrants have temporary jobs. With a high coverage of collective bargaining, these tendencies are reinforced, which suggests that high wage floors make downward adjustment of wages more difficult. In a related study, Kahn (2009) investigates the effects of reforms of regulations for temporary and permanent contracts in Europe since the mid-1990s. He concludes that liberalization of rules – for either type of contract – had no effect on total employment. The

incidence of temporary jobs increased when it became easier to use temporary contracts, though, which suggests that employers mainly substituted temporary workers for permanent ones.

Effects on self-employment are assessed by Congregado et al. (2009). They distinguish between 'true' and 'dependent' self-employment (when a former employee acts as a sub-contractor to a previous employer). The former type of employment reflects the exploitation of business opportunities, while the latter mainly is a means of escaping employment protection legislation. According to their results, transitions from paid employment to 'dependent' self-employment increase with stricter protection. Given a transition to self-employment, the likelihood that it is 'dependent' rather than 'true' also increases with more stringent legislation.

The results of these disaggregate studies seem to indicate that structural change and productivity are influenced in a negative way by employment protection. The effects also appear to be quite different in different industries, which suggests that aggregation of data at the country level is an unsuitable procedure. If countries with, for example, weak productivity growth are more likely to introduce more stringent employment protection, this can lead to difficulties in interpreting the results due to reverse causality. There are few or no studies using disaggregate data as far as other effects are concerned, for example, on employment or unemployment, and to which extent the effects of employment protection

interact with other labour market institutions or macroeconomic shocks.

The attempts to identify industries where legislation is more binding appear to be an improvement of the methodology in relation to previous studies. Potential problems of reverse causality seem to be less serious in these studies. However the results hinge crucially upon whether or not the right industries are identified for this purpose. Another question concerns to what degree other labour market institutions are also binding in these industries, something which can make the possibilities of separating the effects of employment protection difficult.

Within-country studies

Employment protection legislation tends to be changed only slowly and in small steps. Therefore many of the reforms have been too marginal for discovering any noticeable effects. Another problem with most of the reforms from the perspective of an evaluation is that they have been designed in such a way that everyone in the labour market is affected by the reforms, which means that there a few or no suitable control groups. In a number of reforms in various countries – for example, Portugal in 1989, Italy in 1990, Germany in 1996, 1999 and 2004, and Sweden in 2001 – small companies have nevertheless been given special treatment vis-à-vis large ones. In all of these cases, the legislation either became more stringent or less

restrictive for small firms, while regulations for large firms in most cases remained unchanged.

In Spain, a reform was put through in 1997, whereby firing costs for permanent employees were reduced only for certain demographic groups. Partial reforms like this one create suitable control groups, which can be assumed to be unaffected by the reforms. This makes it easier to identify the effects. There are also some countries, such as Chile and Colombia, where the legislation was changed in large steps and even in different directions over a longer period of time. In these countries, the informal sector has been used as a control group.[10]

In other countries, such as the United States and Canada, regional differences in legislation have also been exploited in the research. In the United States, employers have traditionally been able to fire employees at any time and for any reason, according to the 'employment-at-will' principle. Over the course of time since the 1970s, most of the states have introduced various exemptions from this principle, but at different times and covering different areas of the legislation.[11] This has resulted in regional differences in legislation.

Another advantage in studies of single countries is that the possibilities to control for country-specific conditions are greater than in those which are based on cross-country data. One disadvantage, though, is that the possibility to make generalizations which carry over to other countries can be limited due to these country-specific factors.

A neglected issue in most of the research – regardless of the type of study – is the enforcement of employment protection legislation in relation to the letter of the law. A new and promising strand of literature makes use of indirect measures of enforcement, like activities of labour court judges, lawyers and labour law inspectors across regions or types of firms, in order to examine whether within-country variation in enforcement matters for labour market outcomes. In Japan and France, regional variations in judicial discretion have been used in order to identify effects of employment protection.

A great number of effects have been analysed in the within-country studies, some of which have not been examined in other contexts: the flow into and out of employment/unemployment, job reallocation, firm dynamics, productivity, worker absenteeism, wages and profits. The analyses use disaggregate data in general – on the individual, firm or regional level.

Like the cross-country studies, the country-specific studies also tend to find evidence that increased stringency in employment protection legislation reduces labour market dynamics. Kugler and Pica (2006, 2008) exploit the reform in Italy in 1990, which made small firms with less than 15 employees, which earlier had been totally exempt from the regulations, pay higher firing costs than previously (though still at a lower level than larger companies). According to their results, both inflow and outflow of employment in the

small firms, relative to the flows in larger firms, were reduced. In addition, the reduction was greater in more volatile industries. The entry of new firms also diminished, whereas exits were not affected. Similarly, Cingano et al. (2008) find that job reallocation deceased in small firms after the 1990 reform in Italy.

Autor et al. (2007) show that job reallocation and inflow of new firms are lower in those parts of the United States which have implemented more stringent exceptions to the principle of employment at will. Kugler's (2004) analysis of a reform in more liberal direction in Colombia in 1990 suggests that inflow and outflow from unemployment increased. The analysis in Martins (2009) is an exception, where no effect on job reallocation is established. He studies a reform in Portugal in 1989, which allowed small firms with no more than 20 employees to fall under more liberal legislation regarding dismissals for personal reasons. A reform of seniority rules in Sweden in 2001 is analysed by von Below and Skogman Thoursie (2008). The reform made it possible for firms with a maximum of 10 employees to exempt two persons from the seniority list when firing due to lack of work. The authors find no effect on hirings and separations in general.

A number of studies have analysed the reforms of employment protection undertaken in Germany and their effects on employment flows. Bauer et al. (2007) do not find any effect on employment flows in their study, which exploits the reforms in 1996

and 1999. Boockmann et al. (2008) however finds clear evidence that the 1999 reform, which implied stronger employment protection in small firms, contributed to increasing job stability. They take into account the 6-month waiting period before the legislation takes effect (for the individual worker) and argue that previous results for Germany that omit to do this are misleading. The 2004 reform of employment protection is examined by Bauernschuster (2009). He finds that the relaxation of dismissal protection in small firms led to a small positive effect on hirings and no effect on separations. Above all, the reform caused considerable substitution by type of employment contract. That is, firms became prone to hire workers on permanent rather than temporary contracts, in relation to the situation before the reform.

Novel aspects of the enforcement of employment protection are captured in two studies from France and Taiwan. Fraisse et al. (2009) base their study of job flows on measures of regional judicial activity in France and find that the effects vary depending on type of activity, for reasons not related to the state of the labour market. More judges in labour courts means less job creation, while more lawyers assisting workers causes less job destruction. Fraisse et al. (2009) also conclude that pro-firm decisions in the courts tend to increase job destruction. The net effect on job creation is ambiguous. Kan and Lin (2007) exploit the fact that, in Taiwan, enforcement of employment protection legislation is stricter in medium-sized and larger firms than in

small firms, due to provisions in the law in addition to the activities of inspectors. According to their findings, job reallocation is dampened with more stringent enforcement.

Garibaldi and Pacelli (2008) and Pfann (2006) analyse heterogeneous firing costs with individual-level data for Italy and the Netherlands, respectively, and find that higher firing costs decrease the probability of being separated from one's job. Friesen (2005) uses the provincial variation in Canada regarding dismissal costs and gets mixed results, depending on the type of dismissal cost.[12]

Some studies investigate the probability of involuntary separation as a consequence of higher firing costs. Givord and Maurin (2004) study how the probability for involuntary separation is influenced by reforms in legislation regarding employment protection in France. They find that this probability decreases during the more stringent regimes. Technological change also seems to play a role. Involuntary separations were affected the most in industries with a great amount of expenditure on R&D and with many users of new technology. Boeri and Jimeno (2005) obtain results which indicate that involuntary separation is less common in companies with more stringent employment protection in Italy and Spain. Marinescu (2009) examines a reform in Great Britain in 1999, where the tenure necessary to qualify for protection against unfair dismissal was decreased from 2 years to 1. The probability of being fired decreased for workers with 1–2 years of tenure, relative to workers

with longer tenure, mainly due to employers being more selective in their recruitment. She also finds, like Pierre and Scarpetta (2004) that the occurrence of training provided by the employer increased when the legislation became stricter.

An important question is how employment protection influences the possibility for someone unemployed to find a new job compared to other groups. One hypothesis in the literature is that employers to a much higher degree are inclined to hire an employee who is already employed before someone who is unemployed if the legislation is stringent, since it is potentially more expensive to hire a 'wild card'. Kugler and Saint-Paul (2004) and Nicholson and North (2004) find results for the United States which indicate that unemployed persons are disadvantaged in this respect in states with stronger employment protection. A potential negative signalling effect of becoming unemployed, may however be mitigated by seniority rules, where tenure is the sole criterion for being fired. Kugler and Saint-Paul (2004) also find support for the idea that negative effects on job prospects are weaker among employees who belong to a union, for whom seniority rules often apply in the United States.

Receiving notice in advance of collective dismissals can improve the employees' chances of finding a new job. One negative effect of advance notice may be that turnover increases, which can make the company's situation even more difficult. Jones and Kuhn (1995) find that notification times

in Canada decrease the risk of becoming unemployed, but the duration of unemployment is not affected. For Sweden, Jans (2002) provides similar results.

A number of studies research the effects on the level of employment. Here the results are somewhat mixed: Acemoglu and Angrist (2001), Kugler et al. (2002), Martins (2009), Sá (2008) and Schivardi and Torrini (2008) find that employment decreases under more stringent legislation; Bird and Knopf (2009) and Miles (2000) find no effect, while Autor et al. (2007) and Verick (2004) estimate positive effects. The conflicting results in these studies may be due to employment effects being different for different groups.[13] Like Fraisse et al. (2009), Okudaira (2008) bases her study on regional variations in judicial discretion and finds support for a negative employment effect in Japan when the legislation is implemented in a more stringent way.

MacLeod and Nakavachara (2007), who study the effects of exceptions to the principle of employment at will in the United States, find that employment increases in jobs which require higher education and in rural areas, where mobility costs are higher than in the cities. Among those with lower levels of education however, employment is reduced with stricter regulations. The results in Kugler and Pica (2006) indicate that employment for males increases, while it decreases for females.[14] Apprentices are not counted in the size threshold for Italian firms and Trevisan (2008)

finds that this worker category increased in number in small firms after the 1990 reform. Montenegro and Pagés (2004) find that employment decreases for youth and individuals with low levels of education in Chile.

Many studies explore the effects of reforms regarding temporary employment, which has been the most common kind of reform of employment protection in Europe. One of the risks with having many employees with temporary contracts is that the labour force becomes more segmented. Another risk is that unemployment to a lesser degree serves as a check on wage increases for permanent employees. Limiting the possibilities of temporary employment may lead to other problems, though, such as fewer jobs being offered to the unemployed. Bentolila and Dolado (1994) find that liberalization of regulations regarding temporary employment leads to increased wages for permanent employees in Spain, where regulations for permanent employment have been especially strict.[15] Boeri and Garibaldi (2007) study employment effects after a regulatory reform of temporary contracts in Italy. According to their results, employment increased, but only temporarily. Autor (2003) finds that the increase in employment in the temporary work agency sector in the United States can be largely explained by stronger employment protection implemented by some states.

According to theory, the work effort of employees should be influenced by increased stringency in employment protection legislation, but the

effects are ambiguous. Work effort is a multi-dimensional concept and thus not easy to measure. Aspects of work effort, for which data may be available, include to what extent employees are absent from work, for example, due to sickness, and information on overtime work. A number of studies find that stricter legislation leads to more sickness absence, which indicates that the employees' incentives to be present at work diminish when the risk of being fired is reduced. Some of the analyses are based on comparisons of sickness absence among temporary employees versus permanent employees. The incentives for low absenteeism may be greater in the first group, since the probability of a conversion of a temporary job into a permanent one can be negatively influenced by much sickness absence.

Ichino and Riphahn (2005) find that sickness absence is doubled among bank employees who have passed the time limit for permanent employment (12 weeks). Riphahn (2004) exploits the fact that public employees in Germany have stronger employment protection after the age of 40 and after 15 years of employment. This group has more sickness absence than others in the public sector and employees in the private sector of equivalent background. Engellandt and Riphahn (2005) study the propensity among temporary employees to put in overtime and to be absent from work, due to sickness or other reasons. According to their results, temporary employees work unpaid overtime to a much higher degree than permanent

employees, but no difference in absenteeism was found. The authors interpret the latter result in the light of a generally low level of both the stringency of employment protection and absenteeism in Switzerland and argue that this reduces the possibilities for temporary employees to signal high productivity through a low level of absence. For public sector employees in Australia, Bradley et al. (2008) find that absenteeism is larger among workers on a temporary contract than among permanent workers, for whom employment is much more secure. However the difference disappears when tenure is controlled for. Early career concerns for signalling thus seem to have affected workers in a similar manner, regardless of the type of contract.

Worker absenteeism has been examined in Sweden, too, a country with a traditionally high level of sickness absence. Arai and Skogman Thoursie (2005) use establishment data to uncover that sickness absence decreases as the share of temporary positions increases. They interpret these results to mean that lower absenteeism is due to a behavioural effect, which is brought about by higher risk of being fired, and not related to an employment composition effect. Lindbeck et al. (2006) and Olsson (2009) examine the reform of seniority rules in 2001 using individual and establishment data, respectively. Both studies indicate that liberalizing the regulations in small companies reduced sickness absence in these companies. The effect here is also due to changed

behaviour regarding absenteeism and not caused by composition effects. Lindbeck et al. (2006) find however that small firms were more inclined after the reform to recruit people with a history of sickness absence. This may be explained by the firms being more likely to take risks with their recruitments when firing costs decrease.

More worker absenteeism is likely to lead to lower productivity. Effects on productivity from employment protection have been studied by Autor et al. (2007), who find support for a productivity-decreasing effect. The results suggest that total factor productivity decreases, while labour productivity increases. In addition, capital intensity rises. Labour productivity may increase if the possibilities for employees with low productivity to become employed are reduced due to stricter regulations and if more capital is used in production. Cingano et al. (2008) are unable to detect clear effects on total factor productivity, but find that the capital stock increases in firms in which employment protection has been strengthened.

Dolado and Stucchi (2008) specifically study the effect of temporary employment on productivity. This effect is ambiguous a priori. One the one hand, the use of temporary workers may enhance flexibility in the firm and these workers may also put in more work effort in the hope of being offered a permanent job by the employer when the temporary contract expires. On the other hand, temporary workers are less likely than permanent employees

to take part in job training. The results in the study indicate that total factor productivity decreases with a higher share of temporary workers in the firm, while it increases with a higher conversion rate from temporary to permanent jobs. The perceived probability of a conversion of the contract may thus be important for the productivity effects of temporary employment.

In within-country studies there have also been some attempts to analyse effects on wages and profits. As far as wages are concerned, the empirical results, like the theory, point in different directions. Leonardi and Pica (2007) base their study on the Italian reform of regulations in small firms in 1990 and present results, as does Okudaira (2008) for Japan, which are consistent with Lazear's (1990) prediction that employees pay for stronger employment protection by lower wages. Bird and Knopf (2009), Friesen (1996), Martins (2009) and van der Wiel (2008) instead find support for increasing wages. Friesen (1996), analysing Canadian data, finds that wages only rise for union members. The latter group of studies supports the hypothesis that employment protection contributes to bargaining power for key groups of employees (Lindbeck and Snower, 2001). Very few studies analyse the effects on firm profits. The results in Bird and Knopf (2009), based on data for banks in various parts of the United States indicate that profits decrease when the stringency of employment protection legislation increases.

The results in Martins (2009) suggest that firm performance, as measured by sales per worker or surplus per worker, is hurt by rigid labour laws.

Studies of single countries give additional support for the idea that employment protection decreases flows in the labour market and that firm dynamics is reduced. Effects on employment however are mixed, as in the aggregate studies, but distinctly less so: Most studies suggest negative employment effects. Somewhat stronger results appear to be found for productivity effects. Both aggregate and disaggregate studies, whether using direct or more indirect measurements, such as worker absenteeism, show results that for the most part suggest that productivity decreases. The results in the studies on sickness absence raise the question whether there are interactions effects between employment protection and the design of the welfare system. It is possible that the effects on sickness absence are greater with a more generous system regarding sickness insurance. The effects on wages analysed in within-country studies do not point in any specific direction.

In many of the studies for single countries, partial reforms have been exploited, which allows for more reliable identification of employment effects than in other studies. The number of reforms analysed is however relatively small and many studies use the same reform. In addition, general equilibrium effects are ignored, that is to say, the influence on other groups than the group under

study. Furthermore, non-random selection within this group can be a problem. For instance, a firm which is near the size limit for reforms which apply to small firms may have incentives to sort itself into that group which has more liberal employment protection rules. Special circumstances may also make a firm belong temporarily on one side of the threshold.[16] Selection problems can be excluded however, when criteria for being included by a reform is not easily influenced by those for whom the reform was intended, which is true for age, for example.

Studies of perceived job security and psychological well-being

The results presented so far do not say much about the utility that employees derive from employment protection legislation, in the form of increased security in their job or in the labour market more generally. 'Job security', taken literally, applies to security within the present job, while 'labour market security' is a wider concept which also includes the possibility of finding a new job if an employee has been fired.[17] Security in both meanings is an important welfare measure, as, among other things, most people have their main source of income in the form of earned income, and perceived security can also say something about whether or not employment protection legislation is an effective solution for market

failure which is how the legislation is sometimes justified (see the discussion in Chapter 4).

One might expect that effects on perceived security increase with more stringent legislation, since the risk of being fired is reduced. As is the case with most other effects of employment protection, the effect on perceived job security is however ambiguous, since the chances of finding a new job after being fired decrease. It is not easy to capture these concepts of security in available data. On the one hand, one can use survey data, but these can be difficult to interpret since perceived security is a subjective concept. On the other hand, one can use more objective data in the form of risks for involuntary separations, but this data may be difficult to obtain (since often no difference is made between voluntary and involuntary separations) and the data also does not capture the probability of finding a new job after involuntary dismissals. A common problem with both methods is also that it can be difficult to find comparable data across countries and over different time periods.

The studies based on survey data presented in this section are based either on cross-country studies or studies of single countries. There are many analytical problems with using survey data. Reverse causality may exist, since uncertain macroeconomic conditions can lead to more strict or more liberal rules being put into place. Reforms may also cause the number of temporary employees to increase, which might lead to a reduction in perceived job security. There may also be selection

problems, if more risk-averse persons sort themselves into permanent positions.

Clark and Postel-Vinay (2009) tackle these problems by controlling for types of employment contracts and other individual and job-related characteristics. With the help of household panel data (put together by Eurostat), they research how perceived security varies across countries with different levels of stringency in their employment protection legislation. The authors use the following question: 'How satisfied are you with your present job or business in terms of job security?' They find that permanent employees in the private sector and persons with temporary jobs feel more insecure in countries with stronger employment protection. The results are somewhat surprising and it is possible that the answers reflect perceived labour market security rather than job security.[18]

A further number of studies based on survey data show similar results. Böckerman (2004) finds that job security does not increase with stricter employment protection legislation. Wasmer (2008) studies provinces in Canada with different rules for notification time and finds a connection between increased job-related stress and longer notification times. In Canada, the length of the notice period depends on tenure in the case of individual lay-offs and on firm size in the case of collective dismissals, and Wasmer (2008) exploits both sources of variation across regions. He argues that employers may provoke 'voluntary' quitting

by harassment and intensified monitoring or otherwise adjust management and workplace routines so that the psychological well-being of the workforce declines whenever the need for firing someone exists and the firing costs are high. One important point of the study is that the meaning of the concept 'voluntary separation' is ambiguous, and should be judged against the background of the specific labour market institutions prevailing in a country.

Employment protection may also induce locking-in effects under certain circumstances. A study by Aronsson and Göransson (1999) indicates that as many as 28 per cent of permanent employees in Sweden do not regard themselves as being in their preferred occupation. Members of this group also report higher levels of fatigue, depression and headaches than other groups. The seniority principles applied in case of dismissals may prompt workers to remain in a position involuntarily, but the authors do not establish a causal link between employment protection, on the one hand, and locking-in and stress symptoms, on the other. In Sweden, firms have to an increasing extent offered senior workers early retirement benefits in order to motivate workers to quit voluntarily, thus avoiding firing costs (Andersson et al., 2002).

One problem with most of the studies mentioned above is that legislation might capture other country- or region-specific factors not included

in the analysis and which actually explain the differences in perceived security. In other words, the observed differences can depend upon other factors than employment protection. By analysing a reform in a specific country, which only affected certain categories on the labour market, Trevisan (2007) can however handle these problems in a more satisfactory way than has been done earlier. She has researched the effects of a reform in Spain in 1997, which meant that firing costs were reduced for certain groups of permanent employees, among others youth and older people (those over 45), during a period of two years. The intention behind the reform was to reduce the use of temporary employment contracts by increasing the incentives for employers to transform these contracts into permanent positions.

The effect of this kind of reform on perceived security among temporary employees is not given a priori. Security may increase since the probability of finding a permanent job increases, but it may also decrease if uncertainty of keeping a permanent job increases. The same survey question was used as by Clark and Postel-Vinay (2009), that is to say, in a strict sense referring to job security. The results, for the period 1995–2000, do show that the reform brought about an increase in perceived security among temporarily employed youth, but there were no effects discernable for the other groups. The finding that increased security probably was due to the reform is underlined by

the fact that job satisfaction in general (which depends upon other factors than job or labour market security) remained unchanged during this period.

The results which have been reviewed in this section do not seem to indicate that more stringent employment protection leads to greater security, either in one's job or in the labour market.[19] Rather, the relationship appears to be the reverse, that is to say, a high level of employment protection is associated with a lower level of perceived security. Employers in countries with strict regulations regarding permanent employment may have the possibility of using temporary jobs, where job security is lower. But the results also indicate that employees with permanent jobs perceive less security in countries with stricter legislation.

A contributing factor may be that employers may be less inclined to employ unemployed people relative to those seeking to switch jobs, wherever employment protection is strong (Kugler and Saint-Paul, 2004). This raises the question to which degree employment protection actually solves market failures, such as, for example, an imperfect insurance market, as the theoretical literature would suggest. Another question is whether employers in countries with stringent legislation regarding employment protection have greater possibilities of circumventing the rules than employers in other countries.

Notes

[1] In panel studies with fixed effects, only within-country changes in employment protection are used for identification, however.

[2] Structural unemployment is based on estimations of the unemployment rate at which wage growth does not increase (NAWRU).

[3] Blanchard and Portugal (2001) and the OECD (2004) find similar results.

[4] In addition, the time-series variation is to a great extent attained through interpolation, that is to say, in years where no data are available on the index, the value is assumed to be somewhere between the values of the two closest previous and subsequent years for which data are available.

[5] Many studies follow the convention of Davis and Haltiwanger (1999), where job creation in any given industry is calculated as the weighted sum of employment increases in firms which have increased the number of employees and job destruction is calculated as the weighted sum of the absolute employment reductions in firms which have decreased the number of employees in the same industry. Job reallocation is the sum of job creation and job destruction.

[6] The difficulties in comparing across countries have to do with (among other things) differences in (1) units of observation (firms or establishments); (2) size thresholds for inclusion in the data; and (3) coverage of various industries.

[7] One explanation for the absence of a relationship, which has been advanced by Bertola and Rogerson (1997), is that countries with strict legislation also have a compressed wage structure, which makes it easier for firms to adjust the number of jobs than wage levels when there are fluctuations in demand. Arai and Heyman (2004) argue that a similar aggregate job reallocation in various countries may hide great variation in the share of temporary job contracts. In countries with more stringent

employment protection, the number of temporary jobs – characterized by much reallocation – tends to be relatively high. Heyman (2008) tests the hypothesis that a compressed wage structure increases job reallocation. He finds some support for this in the Swedish manufacturing sector, but not in the service sector.

[8] Blanchard and Portugal (2001) find that job reallocation is lower in Portugal than in the United States and draw the conclusion from theoretical premises that this is caused by stronger employment protection in Portugal. Reallocation is only lower in quarterly data, however, and not in annual data. In addition, flows out of employment are lower in Portugal. The differences in the quarterly and annual data may be explained by employment protection above all reducing reallocation when there is a more temporary need to adjusting employment.

[9] The results in Micco and Pagés (2006) regarding productivity seem to be sensitive to whether or not Nigeria is included. Gust and Marquez (2004) find a negative, but in most cases insignificant, relationship between stringent employment protection and the adoption of new technologies (in the form of expenditure for IT).

[10] However, it is far from obvious that the informal sector is not affected by reforms in employment protection, since more stringent legislation can make it relatively easier to find employment outside of the regular labour market.

[11] These exceptions are of three types. 'Implied contract' means that just cause for dismissal is required if the employee can show that a permanent position has been promised by the employer. 'Good faith' stipulates that lay-offs cannot be made in an obviously unfair or dishonourable manner, such as, for example, right before the payment of an annual bonus. 'Public policy' means that a dismissal caused by an employee's actions which are protected by the law, for example, fulfilling military duty or refusal to do illegal actions, such as perjury or participating in a cartel agreement, is not regarded as having just cause. See, for example, MacLeod and Nakavachara (2007) for more details.

[12] Longer notification times for individual lay-offs lead to some reduction in the probability of being fired, while longer notification times for collective dismissals and higher severance pay have no effects.

[13] The different results in some of the American studies seem to depend upon differences in estimation methods and classifications of laws (see Autor et al., 2004). Verick (2004), who exploits a reform with respect to small firms in Germany in 1999, finds stronger results the further the firm is away from the threshold of 5 employees, which suggests that the results are driven by other factors than employment protection.

[14] The authors also find that product market regulations, which increase the entry costs for new companies, seem to make liberalization of employment protection less effective by reducing the effects in sectors with more product market regulation.

[15] They find similar results for a number of other European countries.

[16] This problem is handled in some studies by only including in the analysis companies belonging to the same size classification group for a number of years before and after the reform.

[17] In the literature, there is no distinction made between these two concepts and therefore it is not entirely clear what the often-used term "job security" actually means.

[18] Thus the answers are interpretable as a combination of perceived risk of being fired and perceived utility difference between keeping one's job and becoming unemployed. Different questions to capture these two aspects separately would have been desirable.

[19] There is also at least one study which researches the effects of perceived job security from collective agreements between employers and employees (Bryson et al., 2009). In Great Britain, some companies have introduced so-called job guarantees, which come into effect during reorganization and down-sizing and often are based on the intention that only voluntary separations shall be implemented, through natural attrition, or that those

who lose their position involuntarily will be offered participation in special programs or job coaching activities. Selection problems in these kinds of studies are likely to be serious, however, since the employees' demands for various protection policies are probably greater in firms and industries with economic difficulties.

6. Conclusions and discussion

This chapter summarizes the main findings and discusses how the research presented in this book should be assessed in its entirety and the relevance of the results for policymaking.

Employment protection legislation is one of the most controversial institutions on the labour market. There is an intense and ongoing debate among politicians and representatives of unions and employer organizations regarding the positive and negative effects of the legislation. The purpose of this book has been to present an overview of the vast and rapidly growing economic research on the subject.

The first vital issue is how to rank countries according to their stringency of employment protection legislation. This is not an easy task. Although many aspects of the legislation are relatively easy to quantify, others are basically qualitative. Among the latter is perhaps the most central and complex component in employment protection legislation, namely how just cause for dismissal is defined.

Lack of work and personal reasons, such as gross misconduct or lack of competence, constitute grounds for dismissal in most countries. However

some legislations also require approval of relevant authorities for dismissals due to lack of work and stipulate severance payments to laid-off workers.

A second factor that complicates rankings is the fact that employment protection legislation may be implemented differently across countries. For example, in some countries it may be possible to depart from the legislation in collective agreements. Comparisons of the stringency of legislation may also be distorted by the fact that labour courts tend to implement the laws in different ways depending on the business cycle or on regional variations in legal capacity.

In order to facilitate comparisons of the strictness of legislation across countries, OECD, the World Bank and some researchers have constructed a number of indices and these have been used in many studies on the effects of employment protection legislation. The indices invariably show that employment protection legislation is more stringent in Southern Europe, Continental Europe and the Nordic countries than in Anglo-Saxon countries, like Australia, Canada, Great Britain and the United States.

Theoretical findings

The theoretical contributions in the literature on employment protection have tried to identify its effects and the channels through which they work.

Theory identifies two fundamental, and opposing, effects on employment of stricter rules for employment protection. A direct and apparent effect is that the probability of a lay-off is reduced for an employed individual. This effect tends to increase employment through fewer lay-offs. But an opposing effect arises because employers, in their recruitment decisions, tend to take into consideration that future lay-offs may be more costly or difficult than otherwise, which reduces the propensity for new hirings.

Theory also indicates that vulnerable groups on the labour market are hurt by strict employment protection due to employers becoming more selective when recruiting workers and the typical construction of legislation with firing costs increasing in tenure.

There are theoretical results pointing out the risks associated with the European reform strategy of liberalizing the rules for fixed-term employment, while leaving the rules for regular employment intact. This creates incentives for employers to lay off employees on temporary contracts even if the workers are productive, since otherwise they will become regularly employed with high firing costs. Ultimately, this could lead to excess turnover and unemployment, which counteract the advantages associated with increased flexibility. Segmentation could increase, with a more marked division between insiders and other groups on the labour market. The latter may circulate between temporary jobs, sometimes with periods of unemployment in

between. The direction of the reforms in Europe may be explained by political opposition from insiders, which have made reforms of the rules for regular employment difficult to accomplish.

Theoretical research points to a number of mechanisms through which employment protection may affect productivity. A reduced lay-off risk may cause employees both to invest more in firm-specific human capital and to reduce work effort. If the labour of vulnerable groups is substituted for capital or the labour of skilled workers this could enhance labour productivity, but total factor productivity is not necessarily increased.

Theory suggests that the effects operating via wage formation are also important for other outcomes on the labour market. If employers are compensated for higher adjustment costs with lower wage costs, it is less likely employment, for example, will be negatively affected. If, instead, employment protection increases the bargaining power of insiders, it is possible that wages will increase.

Empirical findings

In empirical work, researchers have attempted to measure the size and direction of the effects of employment protection identified in theory. This empirical research has for long been ill-suited to interpret the questions at hand, but in the past few years the situation has improved by using new methods and sources of data.

A great number of empirical results have been presented in this overview. The studies can be roughly divided according to the kind of data used: cross-country studies using aggregate data, cross-country studies using disaggregate data and within-country studies (as a rule using disaggregate data).

Traditionally, the first type of data has been used to study employment protection effects. The results which appear in these studies, above all the ones concerning effects on aggregate employment and unemployment, are very mixed. Some studies indicate beneficial labour market effects, while others indicate the opposite. There are serious methodological problems associated with these studies however, which undermine the trustworthiness of their results. Among the critical problems are errors of measurement including little variation over time in the stringency of employment protection, reverse causality and the influence of omitted variables.[1] Many, but not all, of these methodological problems can be alleviated or eliminated by using disaggregate data at the regional, industry, firm or individual level. In the case of within-country studies, there is often the additional possibility of exploiting natural experiments, which further increase the possibilities to identify effects due to employment protection – and nothing else – with greater certainty. To the extent that effects of employment protection are different within various industries, groups of individuals or companies,

these effects are not possible to detect using aggregate data.

Some of the studies using better quality data are so new that they have not yet been subject to the quality assurance which publication in a peer-reviewed scientific journal would entail. This means there is an additional factor of uncertainty in the assessment of these studies. But at the same time, many of the results seem to go more in one direction than is the case is aggregate studies. One benefit of aggregate studies however, is that general equilibrium effects can be evaluated, something which is much more difficult in the case of disaggregate analyses.

The state of the research concerning the effects of more stringent employment protection can be summarized as follows:

1. *Effects on aggregate employment, aggregate unemployment and wages seem to be ambiguous*

   However most of the evidence on employment points to either negative or no effects. Studies suggesting positive effects on overall employment constitute a clear minority in the research.
2. *Less dynamics on the labour market*

   Reduced personnel turnover and job reallocation (the probability is reduced both for firings and hirings).

   Reduced structural change (the probability is reduced for creation and destruction of jobs and for entry and exit of firms).

3. *Temporary work increases*

   This seems especially to be the case in countries where legislation pertaining to temporary contracts has been liberalized.
4. *Some evidence pointing to productivity-reducing effects*

   Slower structural change and lower work intensity (such as increased sickness absence, for example) can be factors which contribute to reduced productivity. However increased use of workplace education can counteract the tendency towards reduced productivity. There is some evidence indicating that increased use of temporary work decreases productivity.
5. *Heterogeneous effects for different groups on the labour market and for different industries*

   a. Vulnerable groups in the labour force are put at a disadvantage. Above all, employment prospects deteriorate for youth, while middle-aged men benefit the most. Increased use of temporary job contracts in countries where regulations for permanent employment are stricter contribute to increased labour market segmentation.
   b. Within industries where legislation is more binding, the effects on productivity and other outcomes are also more apparent.

6. *Difficult to establish that perceived job security and psychological well-being increase*

   The somewhat surprising lack of a positive relationship with perceived job security may

be due to stringent employment protection increasing unemployment duration if one loses one's job and if employers are less inclined to hire unemployed people compared to employed people wishing to switch jobs. Job-related stress may increase if employment protection brings about management and workplace routines that affect the psychological well-being of workers in a negative way.

If equal weight is given to studies based on cross-country aggregate data as to the other studies, most of the above conclusions would not dramatically change. While the conclusions regarding effects on productivity would be somewhat weaker, the impression of ambiguous results for aggregate employment or unemployment would be stronger. It is quite possible that employment protection has no effects on aggregate employment or unemployment, but influences other outcomes, such as productivity.

Policy implications and future research

Some of the effects in (1)–(6) are clearly intended by the legislators, such as the reduced risk of being fired. Other effects are probably not specifically desired, but may be tolerated. The weakening of the position of vulnerable groups in the labour market can be seen as one of these. The more difficult question is the extent of weakening that can be regarded as acceptable. Youth tend to have

a lower opportunity cost than older people for being non-employed, since, for example, continued education in general is a relatively more attractive alternative to employment. This argument carries less weight, however, for other vulnerable groups, such as immigrants and the work disabled. For these groups, unemployment is, to a much higher degree, the alternative to employment.

Finally, the research points to effects which are probably neither predicted nor desirable. Negative productivity effects belong here, as do the effects on perceived job security. The last point is especially notable because it is not obvious that legislation solves the market failure that the theoretical literature indicates as a potential explanation for the existence of employment protection legislation, namely an incomplete insurance market. This raises the question whether there are alternatives to legislative action which would satisfy the need for insurance without having the negative side effects which the research literature indicates.

All in all, the evidence shows that employment protection fulfils its basic purpose in protecting jobs, but it is also clear that vulnerable groups are hurt and that efficiency in the labour market is reduced in important ways. However there are still gaps and unresolved points in the literature which make it difficult to expound with any certainty on the aggregate welfare effects of employment protection. This is also a drawback

on attempts to sketch thorough changes in the design of employment protection based on the knowledge provided by the research, despite the identification of a number of positive and negative effects of employment protection.

For example, research seems to have relatively little to say about (1) how strict optimal regulations should be; and (2) according to which dimensions (seniority rules, notice periods, severance pay, etc.) the regulatory framework should be redesigned. However a great deal of research points to risks of labour market segmentation with a large difference in stringency between regulations for permanent and temporary contracts.

Another important aspect which should be taken into account in any discussion of these results is the enforcement of employment protection legislation. For example, the implications of optional employment protection legislation have not been researched, neither theoretically nor empirically. The results of the research indicate, however, that effects of employment protection may be different in different types of industries and firms, which suggest that the use of exceptions can increase efficiency. To what extent departures from the regulations help or hurt vulnerable groups on the labour market appears more uncertain.

Policy proposals will also have to consider that employment protection systems do not operate in isolation, but interact with other labour market, product market and social institutions. Much of the empirical research in this field is inconclusive,

partly because there is relatively little variation in the particular combinations of these institutions across countries. The existence of institutional interactions also implies that caution is warranted when considering 'importing' specific employment protection designs from other countries, be it the Danish flexicurity model or other models.

Despite the difficulties involved, there are a few normative discussions of employment protection in the literature. Employment protection legislation is sometimes contrasted to the system for financing unemployment insurance which exists in the United States (experience rating). The latter implies that, as with employment protection legislation, firings are in principle taxed. The company's taxes are, among other things, dependent upon how many of the previously employed workers are unemployed. One difference compared to employment protection legislation is that the taxation is explicit, not implicit, and therefore simpler and more predictable. What both systems have in common, though, is that hirings may be discouraged.

Blanchard and Tirole (2008) argue that an optimally designed employment protection system can be based on an explicit firing tax, which is used to finance unemployment benefits. This proposal is quite different from current practices in European countries, where unemployment benefits are financed through payroll taxes. Payroll taxes give incentives for firms to lay off workers and do not contribute to employers' internalizing the social costs of firings. Judicial

intervention in connection with lay-offs on economic grounds should be limited, the authors argue, since firms are in a better position than judges to assess whether such lay-offs are justified.

Saint-Paul (2007) has launched a suggestion which is based on having every employee own a financial portfolio with various securities (except stocks in the company where one is employed). An advantage of this plan is that employment protection is achieved without negative side effects in the form of lock-in in unproductive jobs and incentives for low work effort. His suggestion however does not imply that the social costs caused by firings become internalized by the company.

Chéron et al. (2008) are critical of the existing policies of most countries which increase firing costs with tenure, claiming that this increases the job destruction rates for young workers. The authors reason that age-decreasing firing costs would contribute to lower job destruction rates for workers of all ages. Regardless of the age of the worker, employers have incentives to keep a worker if firing costs are expected to decrease in the future.

Although much more is known about the effects of employment protection than just a few years ago, a great deal remains to be explored. However the marginal utility of additional studies on aggregate cross-country data is likely to be low. More

promising avenues of research would seem to be collecting additional information on the actual enforcement of employment protection legislation and constructing more explicit cost measures based on these data.

Note

[1] Many of these problems also exist in aggregate analyses on the effects of taxes, wage bargaining systems and unemployment insurance, for example.

Appendix

How to read the tables:

Period refers to the earliest and the latest year that occur in the study. The period may differ in parts of the analysis.

OECD and Eur indicate that OECD and European countries, respectively, are included, with the number of countries indicated in connection with the abbreviations (e.g., OECD-21). LDC indicates studies where less developed countries are included.

Reference in the Bibliography to the index is given only if the source is in mentioned in the main text. In other cases, full references are available in the cited studies.

The findings are indicated by:

- **+** positive effect of stricter employment protection legislation (EPL)
- **–** negative effect
- **0** no statistically significant effect

EPL-R refers to employment protection legislation (or index) for regular contracts and EPL-T refers to legislation (or index) for temporary contracts, in cases where a distinction is made between the two.

The results are stated explicitly in relation to reforms in within-country studies, in case such reforms have been analysed.

Table A1 Cross-country studies with aggregate data

Study	Period	Countries	Type of index used (or other measure of EPL)	Findings
Addison & Teixeira (2005)	1956–99	OECD-21	Interpolation and updating of OECD (1994) and severance pay from Lazear (1990)	Unemployment **+**, long-term unemployment **0**; employment **0**; labour force participation **0**
Allard & Lindert (2007)	1963–2001	OECD-21	Allard (2005)	Employment **0**; unemployment among youth and females **+**; GDP (level and growth) **–** (with co-ordinated wage bargaining only)
Amable et al. (2007)	1980–2004	OECD-18	Own index based on, inter alia, OECD (1999), Blanchard & Wolfers (2000), Nickell et al. (2003)	Employment **+**; youth unemployment **–**
Baccaro & Rei (2007)	1960–98	OECD-18	Nickell et al. (2003)	Unemployment **0** (in some specifications **–**); wage growth **+**
Bassanini & Duval (2006)	1970–2003	OECD-20	OECD (2004)	Unemployment **0**, interaction effects with macroeconomic shocks ambiguous
Belot & van Ours (2004)	1960–99	OECD-17	Belot & van Ours (2004)	Unemployment **–**; employment **+**. (Both effects appear only with decentralized wage bargaining.)
Belot et al. (2007)	1965–2004	OECD-17	Belot & van Ours (2004)	Hump-shaped relationship between EPL and GDP growth
Bertola et al. (2007)	1960–96	OECD-17	Blanchard & Wolfers (2000)	Youth unemployment **+**
Blanchard & Wolfers (2000)	1960–95	OECD-20	Blanchard & Wolfers (2000)	Interaction with macroeconomics shocks increases unemployment

Botero et al. (2004)	1991–2000	85 (LDC's included)	Botero et al. (2004)	Unemployment + (especially among youth)
Cazes & Nesporova (2007)	End 1990s, 2003	OECD-19 + Eur-10	OECD (2004), Cazes & Nesporova (2007)	Unemployment **0**, long-term unemployment **0**, youth unemployment **0**; employment **0**; labour force participation **0**
De Freitas & Marshall (1998)	1980s	20 LDC's	DeFreitas & Marshall (1998)	Labour productivity (growth) –
Di Tella & MacCulloch (2005)	1984–90	OECD-21	Employer surveys (World Competitiveness Report)	Employment –; labour force participation –; unemployment +
Elmeskov et al. (1998)	1983–95	OECD-19	Updating of OECD (1994)	Unemployment + (effect reinforced at intermediate level of centralization/co-ordination of wage bargaining)
Feldmann (2003)	1997–2001	OECD + Eur-36	Employer surveys (Global Competitiveness Report)	Unemployment + (especially among low-skilled); employment – (especially among youth)
Feldmann (2009)	2000–03	73 (LDC' s included)	Gwartney & Lawson (2005)	Unemployment + (especially among youth and females)
Fialová & Schneider (2009)	1999–2004	Eur-19	OECD (2004)	Unemployment **0**, long-term unemployment **0**; employment –; activity rate –
Garibaldi & Violante (2005)	1960–2000	OECD-17	Belot & van Ours (2004)	Unemployment –; employment +. (Both effects reinforced with decentralized wage bargaining.)
Griffith et al. (2007)	1986–2000	OECD-14	Nicoletti et al. (2000)	Unemployment **0**

(*Continued*)

Study	Period	Countries	Type of index used (or other measure of EPL)	Findings
Heckman & Pagés-Serra (2000)	1980s and 1990s	16 LDC's + OECD-28	Heckman & Pagés-Serra (2000)	Employment – (especially among youth); unemployment + (OECD only); self-employment +
Jimeno & Rodriguez-Palenzuela (2002)	1968–96	OECD-19	Blanchard & Wolfers (2000)	Youth unemployment +, interaction effects with macroeconomic shocks ambiguous
Koeniger (2005)	1973–98	OECD-14	Nickell et al. (2003)	Expenditure on R&D, ambiguous results
Lazear (1990)	1956–84	OECD-22	Lazear (1990) (severance pay and period of notice)	Employment –; labour force participation –; unemployment +
Nickell (1997)	1983–94	OECD-20	OECD (1994)	Unemployment **0**; employment –
Nickell & Layard (1999)	1976–94	OECD-20	OECD (1994)	Short-term unemployment –; employment –; labour and total factor productivity (levels) + (effects only for countries with relatively low productivity at beginning of period)
Nickell et al. (2005)	1961–95	OECD-20	Blanchard & Wolfers (2000), Nicoletti et al. (2000)	Unemployment **0**, interaction effects with macroeconomic shocks **0**
OECD (1999)	1985–97	OECD-19	OECD (1999)	Unemployment (level) **0** (with co-ordinated and centralized wage bargaining –), in- and outflows –, duration +, among youth **0**; employment **0**; self-employment **+**; share of temporary workers **0**. Divergent results to above for EPL-R: unemployment inflows **0**; share of temporary workers –. Divergent results to above for EPL-T: unemployment duration **0**; self-employment **0**

OECD (2004)	1985–2002	OECD-19	OECD (2004)	Unemployment (in- and outflows) –, long-term unemployment +; employment among females and youth –, among low-skilled +. Larger relative EPL difference (EPL-R–EPL-T / EPL-T) increases incidence of temporary work among youth and low-skilled
Parcon (2008)	1990–2005	165 (LDC's included)	Employer surveys (Global Competitiveness Report, difficulty of firing), number of ratified ILO conventions for firing standards	Difficulty of firing: Foreign direct investments –. Firing standards: Foreign direct investments +. (Some evidence of non-linear effects for both indicators.)
Robson (2003)	1965–97	OECD-13	Blanchard & Wolfers (2000)	Self-employment –
Rovelli & Bruno (2008)	2000–05	Eur-27	OECD (2004)	Employment + (with large expenditures on active labour market policies –)
Scarpetta (1996)	1983–93	OECD-17	OECD (1994), Grubb & Wells (1993)	Unemployment + (especially among youth), long-term unemployment +; employment –
Skedinger (1995)	1967–92	Eur-6	Distinguishes between liberal and strict regimes in each country	Youth unemployment + (mainly among teens)
Torrini (2005)	Not stated	OECD-25	Nicoletti et al. (2000)	Self-employment **0**

Table A2 Cross-country studies with disaggregate data

Study	Period	Countries	Type of index used (or other measure of EPL)	Disaggregation	Findings
Acharya et al. (2009)	1970–2006	OECD-4 + India	Deakin et al. (2007)	Industry	EPL-R: Innovation (as measured by number of patents, patenting firms and citations) +; value added (growth) + EPL-T: Innovation **0**; value added (growth) **0**
Almeida & Aterido (2008)	2002–06	66 LDC's	Employer surveys (World Bank Doing Business Data), number of labour inspections	Firm	Job training + (in countries with more strict enforcement of stringent EPL)
Bassanini et al. (2005)	1995–2001	Eur-13	OECD (2004)	Individuals	EPL-R: Job training – EPL-T: Job training **0** (provided by employer –)
Bassanini et al. (2009)	1982–2003	OECD-16	OECD (2004)	Industry	EPL-R: Labour and total factor productivity (growth) – EPL-T: Total factor productivity (growth) **0** (in some specifications +)
Burgess et al. (2000)	1960–92	OECD-7	OECD (1994), Bertola (1990)	Industry	Adjustment of output and employment –
Caballero et al. (2004)	1980–98	60/24 (LDC's included)	Botero et al. (2004), Heckman & Pagés (2000)	Industry	Job reallocation –

Causa & Jean (2007)	1994–2003	OECD-12	OECD (2004)	Individuals	Larger relative EPL difference (EPL-R–EPL-T / EPL-T) increases employment and decreases wages among immigrants. It also increases temporary and casual employment among employed immigrants
Congregado et al. (2009)	1994–2001	Eur-10	OECD (2004)	Individuals	EPL-R and EPL-T: Transitions from paid employment to 'dependent' self-employment +
D'Agostino et al. (2006)	1970–2003	Eur-13	OECD (2004)	Industry	Employment in most service industries not affected, but employment differential against US for service sector as a whole
Daniel & Siebert (2005)	1975–95	OECD-5	Blanchard & Wolfers (2000), Daniel & Siebert (2005)	Establishment	Educational level among newly hired +
Gómez-Salvador et al. (2004)	1992–2001	OECD-13	Nickell et al. (2003), OECD (1999)	Firm	Job reallocation –
Gross & Ryan (2008)	1985–90, 1995–2000	Eur-15	OECD (1999)	Industry	EPL-R: Employment effect of foreign direct investments by Japanese firms – EPL-T: Employment effect of foreign direct investments by Japanese firms +
Gust & Marquez (2004)	1992–99	OECD-13	OECD (1999)	Industry	Expenditure on IT –

(*Continued*)

Study	Period	Countries	Type of index used (or other measure of EPL)	Disaggregation	Findings
Haltiwanger et al. (2006)	1977–2002	16 (LDC's included)	Gwartney & Lawson (2004), OECD (1999)	Firm	Job reallocation – (stronger effects in mid-size and large firms and among newly established or exiting small firms)
Javorcik & Spatareanu (2005)	1998–2001	Eur-19	Botero et al. (2004), employer surveys (Global Competitiveness Report)	Firm	Foreign direct investment – (stronger effects in service sectors)
Kahn (2007)	1994–98	OECD-7	OECD (1999)	Individuals	Employment among youth and immigrants –; temporary employment among low-skilled, youth and females +. (Both effects stronger in countries with high coverage of collective agreements.)
Kahn (2009)	1996–2001	Eur-14	Analysis of periods before and after reforms	Individuals	Liberalization of EPL-R and EPL-T had in general no effect on employment. Liberalization of EPL-T increases share of temporary jobs (especially in times of high unemployment)
Lafontaine & Sivadasan (2009)	2000–03	43	Botero et al. (2004), employer surveys (Global Competitiveness Report)	Establishment (within one US-based multinational firm)	Adjustment of employment –; delay of entry into a country +; expansion of outlets in a country –

Messina & Vallanti (2007)	1992–2001	Eur-14	OECD (2004), Blanchard & Wolfers (2000)	Firm	Job reallocation – (above all job destruction is reduced over business cycle, stronger effects in contracting industries)
Micco & Pagés (2006)	1985–95	69 (LDC's included)	Botero et al. (2004)	Firm	Job reallocation –; employment –; labour productivity (level) ambiguous results
Pierre & Scarpetta (2004)	Not stated	78 (LDC's included)	World Bank (2005), employer surveys (WB, Investment Climate Survey)	Firm	Temporary employment +; workplace training +
Sá (2008)	1995–2005	Eur-15	OECD (2004)	Individuals	EPL-R: Labour force participation **0**; employment – (among immigrants with ≥ 6 years of residence +). EPL-T: Labour force participation + (among immigrants with > 10 years of residence –); employment + (among immigrants with > 10 years of residence –)
Salvanes (1997)	1973–91	OECD-7	OECD (1994)	Industry, firm	Job reallocation –
Scarpetta et al. (2002)	1984–98	OECD-19	Nicoletti et al. (2000)	Industry, firm	Entry of new firms – (no effects for smallest and largest firms); total factor productivity (growth) – (especially at intermediate level of centralization/co-ordination of wage bargaining)

Table A3 Within-country studies

Study	Period	Country	Type of data, reform etc.	Findings
Acemoglu & Angrist (2001)	1988–97	US	Reform in 1991 (Americans with Disabilities Act) increased, inter alia, firing costs for disabled employees, individual data	Employment among the disabled (men of all ages and women under 40) decreased after reform
Arai & Skogman Thoursie (2005)	1989–99	Sweden	Establishment data	Negative relationship between incidence of temporary employment and sickness absence
Autor (2003)	1973–95	US	State variation in EPL	Employment in temporary work agencies +
Autor et al. (2004)	1978–97	US	State variation in EPL	Employment –
Autor et al. (2006)	1978–99	US	State variation in EPL	Employment – (in short run stronger effects among females and low-skilled); job reallocation –; wages **0**
Autor et al. (2007)	1970–99	US	State variation in EPL, establishment data	Job reallocation – (especially in manufacturing); entry of new firms –; employment +; capital investments +; labour productivity (level) +; total factor productivity (level) –
Bauer et al. (2007)	1995–99	Germany	Weaker and stronger EPL in small firms in 1996 and 1999, respectively, individual and establishment data	Personnel turnover not affected by reforms
Bauernschuster (2009)	2001–05	Germany	Weaker EPL in small firms in 2004, establishment data	Positive effect on hirings, no effect on separations in small firms after reform. Substitution from temporary contract hirings to permanent contract hirings

von Below & Skogman Thoursie (2008)	1999–2002	Sweden	Exemptions from "last-in first-out" rules in small firms 2001, establishment and individual data	No effect on hirings and separations in general after reform (but increase in separations for older workers)
Bentolila & Dolado (1994)	1983–88	Spain	Liberalization of legislation for temporary employment 1984, firm data	Increased incidence of temporary employment caused wages to increase for insiders after reform
Bird & Knopf (2009)	1977–99	US	State variation in EPL, firm data (banks)	Employment **0**; investment **0**; profits **–**; wages **+**; entry of new firms **0**; exit of firms **0**
Boeri & Garibaldi (2007)	1994–2000	Italy	Liberalization of EPL in 1997, firm data	Increase in temporary employment after reform increased employment (in the short run only) and reduced labour productivity (growth)
Boeri & Jimeno (2005)	1994–96, 1992–99	Italy, Spain	Individual data	Probability of layoff **–**
Boockmann et al. (2008)	1996–2001	Germany	Stricter EPL in small firms 1999, individual and firm data	Probability of remaining in employment increased after reform (accounting for the 6-month waiting period before EPL takes effect)
Bradley et al. (2008)	2001–04	Australia	Individual data (public sector employees)	Absenteeism is lower among workers with temporary contract than among permanent contract workers, but the difference disappears when tenure is controlled for
Cingano et al. (2008)	1982–94	Italy	Stricter EPL in small firms 1990, establishment data	Job reallocation decreased and capital stock increased after reform. No clear effect on total factor productivity
Dolado & Stucchi (2008)	1991–2005	Spain	Firm data	Total factor productivity decreases with higher proportion of temporary workers and increases with higher conversion rate from temporary to permanent jobs

(*Continued*)

Study	Period	Country	Type of data, reform etc.	Findings
Engellandt & Riphahn (2005)	1996–2001	Switzerland	Individual data	Employees on temporary contract work more overtime, no effect on absenteeism
Fraisse et al. (2009)	1990–2004	France	Regional variation in judicial measures of activity (density of judges and lawyers assisting workers). Regional, establishment and individual data	Higher density of judges leads to less job creation, while higher lawyer density leads to less job destruction. Ambiguous results for net job creation
Friesen (1996)	1986–87	Canada	Provincial variation in EPL, individual data	Wages **+** (among unionized workers only)
Friesen (2005)	1988–90	Canada	Provincial variation in EPL, individual data	Probability of layoff **–**
Garibaldi & Pacelli (2008)	1985–99	Italy	Individual data	Higher severance pay reduces probability of layoff
Givord & Maurin (2004)	1982–2002	France	Individual data	Probability of layoff **–**
Holmlund (1995)	1976–93	Sweden	Liberalization of EPL 1982, aggregate data	Outflow from unemployment increased among youth relative to that of older individuals after reform
Ichino & Riphahn (2005)	1993–95	Italy	Individual data (bank employees)	Sickness absence increases after 12 weeks, after which probationary employment is converted to permanent employment
Jans (2002)	1992–98	Sweden	Individual data	Notice reduces probability of unemployment, but has no effect on its duration

Jones & Kuhn (1995)	1980–81	Canada	Individual data	Notice reduces probability of unemployment, but has no effect on probability of long-term unemployment
Kan & Lin (2007)	1983–95	Taiwan	Establishment data	Worker flows –; job flows –; job reallocation –. (More dampening in larger establishments, where enforcement is stricter.)
Kugler (2004)	1988–96	Colombia	Liberalization of EPL 1990, individual data	Increased inflows to and outflows from unemployment after reform (especially among youth, high-skilled and employees in large firms); ambiguous effect on unemployment (level)
Kugler et al. (2002)	1987–2000	Spain	Liberalization of EPL for, inter alia, youth, individual data	Increased permanent employment among youth after reform, more transitions from unemployment and temporary employment to permanent employment among youth and older individuals (aged 45+), no effect on transitions from permanent employment to unemployment (except for older workers)
Kugler & Pica (2006)	1986–95	Italy	Stricter EPL in small firms 1990, individual and firm data	Increased employment among males in small firms, reduced among females after reform (smaller effects in industries with stricter product market regulations)
Kugler & Pica (2008)	1986–95	Italy	Stricter EPL in small firms 1990, individual and firm data	Hirings and separations reduced in small firms after reform (especially in less stable industries before reform); entry of firms reduced, no effects on exits
Kugler & Saint-Paul (2004)	1979–96	US	State variation in EPL, individual data	Propensity to hire employed workers instead of unemployed +
Leonardi & Pica (2007)	1986–94	Italy	Stricter EPL in small firms 1990, individual and firm data	Reduced wage premia for tenure of 1–2 years in small firms after reform, no effect on wages for newly hired

(*Continued*)

Study	Period	Country	Type of data, reform etc.	Findings
Lindbeck et al. (2006)	1998–2002	Sweden	Exemptions from "last-in first-out" rules in small firms 2001, individual data	Sickness absence decreased in small firms after reform
MacLeod & Nakavachara (2007)	1983–94	US	State variation in EPL, individual data	Employment, ambiguous results (increases among high-skilled, reduced among low-skilled)
Marinescu (2009)	1996–2004	UK	Stricter EPL 1999, individual data	Reduced probability of layoff, shorter durations of unemployment and more employer-provided training after reform, no wage effects
Martins (2009)	1989–1999	Portugal	Liberalization of EPL 1989, especially in small firms, individual and firm data	Modest increase in net job creation in small firms after reform, through increase in hirings. Also increases in firm performance (sales and surplus per employee) and reduced wages
Miles (2000)	1965–94	US	State variation in EPL	Unemployment **0**; employment **0**; temporary employment +
Montenegro & Pagés (2004)	1960–98	Chile	Individual data	Employment among youth and low-skilled –
Nicholson & North (2004)	1979–2000	US	State variation in EPL, individual data	Duration of unemployment +
Okudaira (2008)	1985–2000	Japan	Regional variation in allocation of judges in labour disputes and in pro-worker judgments	Employment –, female part-time employment +; wages –
Olsson (2009)	1994–2001	Sweden	Exemptions from "last-in first-out" rules in small firms 2001, establishment data	Sickness absence decreased in small firms after reform

Pfann (2006)	1993–96	Netherlands	Individual data (one large firm)	Probability of layoff reduced for individuals with high firing costs
Riphahn (2004)	2001	Germany	Individual data	Sickness absence + (among public sector employees with stringent EPL)
Sá (2008)	1992–2006 (Spain), 1986–99 (Italy)	Spain, Italy	Liberalizations of EPL for, inter alia, young and old workers (Spain, 1997 and 2001), stricter EPL in small firms (Italy, 1990). Individual data	Spain: permanent employment increased after reform (for young natives and old native women, no effect for immigrants). Italy: hiring and firing reduced after reform (for natives and immigrants, smaller effects for latter group)
Schivardi & Torrini (2008)	1986–98	Italy	Stricter EPL in small firms 1990, individual and firm data	Propensity to increase employment reduced with stricter EPL, no effect on (weekly) wages
Trevisan (2008)	1982–97	Italy	Stricter EPL in small firms 1990, individual and firm data	Number of apprentices (not counted in size threshold) increased somewhat with stricter EPL
Verick (2004)	1997–2001	Germany	Stricter EPL in small firms 1999, individual and firm data	Employment increased in small firms after reform
van der Wiel (2008)	1996–2001	Netherlands	Reform of notice periods in 1999: longer period for low-tenured workers, shorter for high-tenured workers. Individual data	Longer period of notice due to the reform increased wages

Table A4 Studies of perceived job security and psychological well-being

Study	Period	Country/ Countries	Type of index used, data, reform etc.	Findings
Böckerman (2004)	1998	Eur-16	OECD (1994), individual data	Negative relationship between EPL and perceived job security
Clark & Postel-Vinay (2009)	1997–2001	Eur-12	OECD (1999), individual data	Negative relationship between EPL and perceived job security (except for permanent employees in public sector)
Trevisan (2007)	1995–2000	Spain	Liberalization of EPL 1997, for, inter alia, youth, individual data	Perceived job security increased among youth after reform
Wasmer (2008)	1994–2003	Canada	Provincial variation in EPL (length of notice period), individual data	Positive relationship between EPL and job-related stress

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