

CEP Discussion Paper No 730

June 2006

Patterns of Work Across the OECD

Guilia Faggio and Stephen Nickell

Abstract

Market work per person of working age differs widely across the OECD countries and there have been some significant changes in the last forty years. How to explain this pattern? Taxes are part of the story but much remains to be explained. If we include all the elements of the social security systems like early retirement benefits, sickness and disability benefits and unemployment benefits, then we can capture some aspects of the overall pattern but still a lot remains unexplained. The story favoured by Alesina et al. (CEPR DP.5140, 2005) is that the nexus of strong unions, generous welfare and social democracy implies both high taxes and pressure in favour of work-sharing in response to adverse shocks. This story, however, falls foul of the simple fact that most Scandinavian countries now do much more work than the French and Germans despite having stronger unions, more generous welfare, higher taxes and more social democracy. Ultimately, we are forced into the position that there is no simple story. Some of the broad patterns can be explained but there remain country specific factors which are hard to identify but lead to substantial differences from one country to another.

Keywords: work, working hours, employment

JEL Classification: J22

This paper was produced as part of the Centre's Labour Markets Programme. The Centre for Economic Performance is financed by the Economic and Social Research Council.

Acknowledgements

Giulia Faggio is a Research Officer at the Centre for Economic Performance, London School of Economics. Stephen Nickell is an Associate of the Centre for Economic Performance and member of the Monetary Policy Committee, Bank of England.

Published by
Centre for Economic Performance
London School of Economics and Political Science
Houghton Street
London WC2A 2AE

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means without the prior permission in writing of the publisher nor be issued to the public or circulated in any form other than that in which it is published.

Requests for permission to reproduce any article or part of the Working Paper should be sent to the editor at the above address.

© G. Faggio and S. Nickell, submitted 2006

ISBN 0 7530 2026 2

1. Introduction

In the early 1970s in France, Germany, the United Kingdom (UK) and the United States (US), more or less the same proportion of the population of working age were actually working (65-70 per cent). And, on average, they were working roughly the same number of hours per year (1850-1950). By contrast, in Sweden, more people were working (74 per cent) but much shorter hours per year on average (around 1650 in 1973). In Italy, many fewer people were working (55 per cent) but about the same average hours (1868 in 1970).

Three decades later some things have changed a lot, others very little. In France and Germany, average employment rates have fallen a little and average hours per year have fallen dramatically to just over 1400 hours. In the UK employment rates are much the same but average annual hours have fallen slowly but steadily to below 1700 hours. In the US, the employment rate has risen a little and average annual hours have fallen a little. Interestingly, US employees now work more hours per year, on average, than employees in any of the rich countries of the OECD¹. Little has also changed in Sweden over the last thirty years, with the employment rate remaining high and annual hours falling only very slightly. Italy also still has an exceptionally low employment rate but annual hours here have fallen a fair bit (to around 1600) but not to the levels reached in France and Germany.

Overall, as we shall see, the picture with regard to market work is quite complicated. Generally, the Scandinavians, along with the Dutch and Swiss have the highest employment rates. The Americans, Australians and Japanese work more hours per year than the rest. The Southern Europeans (and the Belgians) generally have the lowest employment rates but not the lowest annual hours which may be found in Denmark, France, Germany, the Netherlands and Norway. Adding employment and hours together, we find that Americans, Australians and New Zealanders are the hardest workers, on average, and the French, Italians and Belgians work least hard². The hardest working countries work about 40 per cent more than the least hard working.

The fact that this number is so large has instigated a significant body of research which has often focused on why, in particular, Americans work so much harder than the average European. An empirical overview may be found in Nickell (1997) (Table 2 and Table 7, col. 3) and this suggests that employment protection, taxes and unco-ordinated unions tend to be associated with lower labour input. On top of this, there is a great deal of empirical evidence on the determinants of overall employment rates including Nicoletti and Scarpetta (2002) and Nickell et al. (2003). By and large, they come to similar conclusions, namely that unions, taxes and employment protection are associated with lower employment rates but if union activity is co-ordinated, the impact of unions and taxes is moderated. Furthermore, there is some evidence that low levels of competition in product markets is also associated with low employment rates.

More recently, Prescott (2004) argued that taxes are the key, explaining more or less all the variations in labour input across countries. Davis and Henrekson (2004) also emphasise the importance of taxes. Both these papers echo the results of Daveri and Tabellini (2000) who find that labour taxes can explain most of the fluctuations in unemployment in those countries which do not have co-ordinated pay bargaining. This strong emphasis on the role of labour taxes has been criticised on the grounds that it is inconsistent with the bulk of the cross-country evidence, basically because of omitted variable bias (Nickell, 2003), or on the grounds that it is inconsistent with the evidence on labour supply elasticities (Alesina et al., 2005).

Alesina et al. (2005) then go on to note that labour inputs have fallen especially in countries characterised by strong unions, extensive welfare, high taxation and social democratic governments. As they remark “The bottom line is that hours worked fell in countries that can be characterised by the Continental European model and did not fall in the countries with the American model (with Britain and Ireland in between)” (p.23). The basic argument is that trade unions respond to adverse shocks by trying to protect employees, pressing for work sharing as well as employment protection more generally, which tends ultimately to reduce overall labour input. This is reasonably plausible although the fact that Sweden, the home of social democracy, strong unions and the welfare state, has seen only very modest reductions in labour input over the last thirty years gives pause for thought. Furthermore, Australia, where over 80% of

individuals still have their pay determined by union bargaining, has seen little or no reduction in labour input. By contrast, in the UK, where both union membership and coverage have collapsed since 1980, annual working hours have fallen by 250 hours (14%) since 1973, whereas hours in Sweden fell by a mere 79 over the same period.

In the light of this, it is perhaps worth pursuing the forces underlying fluctuations in the volume of market work per capita a little further. In the next section, we look at the current overall picture and how it divides into annual hours and employment rates. We then look at the history of both these, emphasising the huge variations across the different countries. In Section 3, we focus on changes in the participation rates of different sub-groups of the population, notably, prime-age men and women as well as older men. We also consider overall unemployment rates. In Section 4, we analyse annual working hours, trying to explain the large differences in the changes since the early 1970s. Finally, in Section 5, we summarise our findings and provide a synthesis of the various explanations of changes in labour input over the last thirty years.

2. The Overall Picture

In Table 1, we present a picture of labour input in 2002 in the richer OECD countries, showing the division between employment rates and hours. The big three countries of Continental Europe (France, Germany, Italy) plus Belgium has the lowest input levels and many of the “Anglo-Saxon” economies plus Japan have the highest input levels. Denmark, Switzerland, Sweden, Portugal and Finland tend towards the high input end of the spectrum. Turning to the division between employment rates and annual hours, significantly more people work in Denmark, Norway, Sweden and Switzerland than elsewhere. The big countries of Southern Europe, Spain and Italy have many fewer people in work than the remainder. Looking at annual hours, we see from column 3, annual hours tend to be high in the Anglo-Saxon economies and particularly low in the Netherlands and Norway with France and Germany on the low side.

In Table 2, we divide annual hours into hours per week and weeks per year. An alternative picture, based on different data, may be found in the Appendix. Broadly speaking, the outcome is much the same although there are large differences for one or two countries. Hours per week vary relatively little across countries except for the

Netherlands which has by far the highest number of part-timers. More interesting is weeks worked per year, where there is much variation. Weeks not worked generally consist of either of holidays and vacations or of absences due to sickness or maternity leave. In practice, absences due to labour disputes, training and so on are of minor significance. Looking first at vacations and holidays, what stands out is that these are between two and four weeks lower in the US than in any of the other countries. This is possibly due to the differences in data sources, but it is also consistent with the fact that many workers in the US only have one or two weeks paid vacation per year, which would be illegal in nearly all OECD countries. Unfortunately, we do not have comparable data for other non-European countries but we do know that Australian workers, for example, have a legal minimum of 5.8 weeks holiday and vacation time each year (see Table 15, below).

Other absences are a residual and consist mainly of sickness or maternity leave. There is a good deal of variation here which may, in part, be due to measurement error. The data in two tables in the Appendix present some alternative numbers which again show significant variations in sickness and maternity leave. These we investigate further below. Overall, we see that annual holidays and vacations are much the same in most countries with the notable exception of the United States. On top of this there are wide variations in weeks of other absence, mainly sickness and maternity leave.

Some History

Having seen how labour inputs vary across countries, it is worth looking at how employment rates and annual hours worked have changed over the last three or four decades. Starting with employment rates, a striking feature of the numbers in Table 3 is that in the early 1970s, the pattern of employment rates across countries was much the same as it is today. The Scandinavian countries plus Switzerland have always had the highest employment rates and still do. Spain, Italy and Belgium have always had the lowest employment rates and still do. Some countries have seen significant increases, most notably the Netherlands, with smaller increases in Norway, Canada, New Zealand and the US. In every country, the employment rate of women has risen, by anything from 10 to 35 percentage points. Finland is the exception here, partly because it had high rates of female participation even in the 1960s. Typically,

therefore, the employment rates of men have declined over the same period. Finally, of course, these employment rates have been affected by the dramatic fluctuations in unemployment in the 1970s to the early 1990s.

Underlying this relatively stable pattern are some significant changes in the employment rates of a variety of different sub-groups which we shall pursue below. Turning to the history of annual hours in Table 4, the changes over the last three or four decades are much larger than the changes in the employment rates. In 1970, in nearly all countries for which data are available, annual hours were typically between 1850 and 1950. However, in Sweden and Norway, annual hours were already well below this level despite a very buoyant demand for labour, with unemployment rates in the two countries being 1.2 and 1.6 per cent, respectively. By 2004, some countries had seen dramatic changes. In France, Germany and the Netherlands, annual hours fell by around 500 from 1970 to 2004, in Norway and Japan, the fall was around 400 and in Ireland and the UK the fall was close to 300. By contrast, in Sweden Australia, Canada and the US, the fall over this same period was between 100 and 150. These differences are striking and we shall pursue them further below.

In the next section we consider various components of the employment rate.

3. Aspects of the Employment Rate

First, we can see in Table 5, how employment and inactivity rates differ across both men and women and different age groups. We focus here on the over 25s because we do not wish to pursue questions about participation in education.

There are a number of interesting features of Table 5 which are worth following up. First, while the employment rates of prime age men (25-54) do not appear to vary very much, there are some quite striking differences in inactivity rates for this group. Furthermore, the inactivity rate now exceeds the unemployment rate in nearly every country. Second, the inactivity rates of older men (55-64) differ significantly across countries from Belgium, France, Italy and Austria where over half of older men are inactive to Sweden, Switzerland, Japan and New Zealand where less than one quarter are inactive. Third, inactivity rates among prime age women are over 30 per cent in

Ireland, Italy, Spain and Japan and around 15 per cent in Scandinavia. Interestingly enough, inactive women are not specifically looking after children. Since the 1990s, the inactivity rates of women are inversely correlated with fertility rates across countries. So in what follows, we focus on each of these three issues, starting with inactivity among prime age men.

Inactivity among prime age men

The history of this aspect of labour input is set out in Table 6. Back in the 1960s and early 1970s, prime age male inactivity rates rarely exceeded 5% by any significant amount. By 2004, only two countries have rates below 5%. Countries where prime age men have inactivity rates exceeding 9% today include Finland, Norway, Sweden, UK, Australia and the US. This is an odd group of countries because, by and large, they are noted for their relatively high levels of labour input. Thus, by contrast, France and Germany have particularly low levels of prime age male inactivity and the EU average is only 7.6%. The evidence which we have on this issue suggests that a significant proportion of these inactive men are categorised as long-term sick or disabled (European Labour Force Survey). Furthermore, we know that the rules governing entry into the disability benefit system are crucial, because exit rates are generally very low. In some countries, these rules were significantly weakened in the last thirty five years, in others not. Thus in Bound and Burkhauser (1999), Table 17 we find the following:

Age	<u>Disability transfer recipients per 100 workers</u>			
	15-44		45-59	
	1970	1995	1970	1995
US	1.1	3.9	3.3	10.3
Sweden	1.8	3.2	6.6	15.1
Germany (W)	0.7	0.6	7.5	8.7

So in the US and Sweden, the numbers more than double from 1970 to 1995 whereas in Germany they barely change. In the UK, they rise even faster (see Faggio and Nickell, 2003).

Inactivity among older men

The history of inactivity among older men is presented in Table 7. Back in the early 1970s, these inactivity rates rarely exceeded 25% with the notable exception of Italy. The situation here was exceptional because at that time Italian men were entitled to a generous public pension at age 60. By the early 1990s, inactivity rates among older men exceeded 25% in all countries except Japan and were above 45% in many Continental European countries outside Scandinavia. Why did this happen? Basically, much of this change can be explained by the increase in financial incentives to retire early. And, by and large, these incentives were introduced to remove older workers from the labour force under the mistaken belief that this reduction in effective labour supply would help reduce high levels of unemployment. For example, in 1979, Italy introduced “unemployment pensions” at age 57+, if unemployment was due to severe economic conditions or industrial reorganisation. In France, unemployment benefits were paid to those over 56 with no requirements to seek work or retrain.

Blondal and Scarpetta (1998) present a detailed analysis of the incentive issue and their panel data regressions reveal the importance of financial incentives in determining early retirement. In the 1995 column in Table 7, we present, in parentheses, the estimated inactivity rates were pension systems to be made actuarially neutral up to age 64. In many European countries, this makes a substantial difference. Duval (2003) extends this work and in Table 8, we report the implicit tax rates on those working between 55 and 64 generated by the early retirement and pension systems. Then, in Table 9, we show some of Duval’s regressions simply to illustrate the importance of implicit tax rates in determining early retirement. For example, an implicit tax rate at age 60 of 50 per cent will generate a fall in participation of 8.5 per cent. In the parentheses after the 1999 column in Table 7, we show Duval’s estimates of the inactivity rate were early retirement schemes to be removed and actuarial neutrality introduced up to 64. Again, they show big effects for many countries taking the inactivity rates back to 1970s levels. Interestingly, by 2004, we can see that inactivity among older men has started to fall in a significant number of countries, particularly those where early retirement incentives have been reduced, notably Finland, Denmark and the Netherlands.

Inactivity among prime age women

The overall picture is provided in Table 10 and this shows that there has been a continuing fall in inactivity among prime age women in nearly every country. But inactivity rates are still high in Ireland, Italy, Japan and Spain. Indeed, far higher than in much of Scandinavia in the 1970s. Furthermore, whereas in the 1970s, fertility was positively correlated with inactivity across OECD countries, it is now negatively correlated. So in the low inactivity countries, women not only work more, they also have more children.

Much micro-econometric work and the cross-country analysis in OECD (1990), Chapter 6 and Jaumotte (2003) suggest that marginal tax rates may be important here. So in Table 11, we present the marginal rates facing married women at zero hours and when they are earning 67% of average earnings given their spouses are earning 100% of average earnings. Here, we see some significant cross-country variations, particularly at zero hours. If, by some mechanism or other, married women have their own tax allowance, their marginal rate at zero hours will be zero. At the other extreme, their earnings may simply be added to their husband's for tax purposes, so their marginal rate will be the same as their husband's. It is plain that high marginal rates at zero hours generate a strong disincentive to working a low number of hours per week. Even at more normal hours, however, there are large variations in marginal rates across countries.

The implications of these and other variables may be found in the panel regressions explaining participation in Table 12. Marginal tax rates have important effects, as might be expected, with 10 percentage point increases in both the rates included in the regression reducing participation rates by around 3 percentage points. The strictness of employment protection laws on regular employment has a significant negative effect as does union density. Introducing measures of business sector labour productivity and male unemployment in column 2 has little impact on the key variables noted above. The negative impact of these new variables is not easy to interpret because they are potentially endogenous³. They are only introduced because they have been included in other work (eg. OECD, 1990, Table 6.3 and Jaumotte, 2003, Table 5) and it is worth checking that they do not change the key results. The same argument applies to the inclusion of variables capturing public expenditure on

children and parental leave. These will also tend to be endogenous but their inclusion has little impact on the marginal tax rate and employment protection effects. The impact of union density is, however, eliminated.

Overall, marginal tax rates and employment protection seem to have relatively robust negative effects. However, the time dummies in the regression in column 1 reveal a background rise in female participation by 14 percentage points and this is even bigger after we add in further variables in column 3. The implication of this is that there are further factors driving female participation which we are not able to capture. Furthermore, looking at the trends in inactivity implicit in Table 10, it is plain that there are large differences across countries. For example, there are very significant differences in apparent preferences about part-time work. This is important, because a willingness to work part-time clearly helps in obtaining a job. In Table 13, we show the percentage of these who work part-time and the percentage of these who do so voluntarily. Thus in Finland and Spain, few women work part-time despite married women facing zero marginal tax rates at zero hours. Furthermore, around half of these do so “involuntarily”. By contrast, in the Netherlands, more than half the working women are part-timers and the vast majority of them wish to be so.

In summary, we can identify certain variables such as marginal tax rates and employment protection, which impact on the participation rates of prime age women. But explaining why the vast majority of prime age women in Scandinavia were active in the labour market by the early 1970s when only a small minority were economically active in Italy and the Netherlands, and why the changes in subsequent decades differ so much, is not easy on the basis of standard economic variables. In all the countries, there are a number of causally interacting trends among women going at different speeds in different countries – rising education, falling fertility, rising participation, rising expenditures on child care, rising productivity, rising wages. Sorting out these interactions remains to be done.

Overall unemployment rates

Since a great deal is known about the subject (see Nickell, 2003 or Nickell et al., 2005 for example), we comment only briefly on overall unemployment rates. In Table 14, we show the overall trends. The basic picture is one where unemployment rose across

the OECD from the 1960s to the early 1980s, peaking then or in the early 1990s before falling back to 1970s levels in most countries or remaining stubbornly high in some, notably the big four of continental Europe (France, Germany, Italy, Spain). In 2004, around half of the European countries in our list had lower unemployment than the United States, thereby emphasising that only a part of Europe suffers from the slightly mythical “European unemployment problem”.

To avoid high levels of unemployment, the following policies seem to work. First: a social security system which concentrates on placing individuals in jobs. It is important that specific people in the employment service are responsible for specific workless individuals. Further, employees of the employment service must be well trained and have the correct incentives. They can employ a mixture of carrots and sticks. The actual level of benefits is not particularly important. Second: having the right sort of wage determination system. If there is a high level of collective bargaining coverage, some degree of co-ordination of bargaining is required. High coverage alongside low union membership as well as decentralised and adversarial bargaining typically results in high unemployment. Also helpful are relatively low labour taxes and the absence of very strict employment protection legislation. Finally, a deregulated service sector helps to sustain a buoyant labour market when, inevitably, manufacturing employment is on a downward trend.

This completes our discussion of the important factors determining employment rates. We next turn to hours worked per year by the employed.

4. Annual Hours Worked by the Employed

Despite the huge variations in annual hours worked by the employed⁴ across the OECD, less is known about this than about employment rates. As we have already seen in Table 4, except for Sweden and Norway where female participation was very high, annual hours in 1970 were between 1850 and 1950 in most countries for which data are available. Since that time, annual hours have fallen by anything from 100 to 150 in Sweden, Australia, Canada and the US to around 500 in France, Germany and the Netherlands.

We have already noted that variations in annual hours are driven, in the main, by holidays and paid vacations and by sickness and parental leave. Looking over time, we see from Table 15 that in many countries there has been a significant increase in the minimum annual paid leave governed by legislation. In both Italy and the UK, there was no legislation until the late 1990s when the European Working Time Directive (November 1993) was incorporated into national legislation. By and large this made little difference in practice because annual paid holiday typically exceeded four weeks in Italy and even as far back as 1981, average annual weeks of holiday for manual workers in the UK was 4.2 (see OECD, 1990, Table 6.1). Perhaps the most noteworthy point is that the US is unique among the developed OECD countries in having no legal minimum to annual paid leave.

Another contributory factor to changes in annual hours is the incidence of part-time work. This is not, of course, an explanation of changes in annual hours since it is merely one of the mechanisms by which the hours which people choose to work are expressed. In Table 16, we see the history of part-time employment. In many countries, there has been an increase in part-time employment, but it remains below 20 per cent in most countries. The UK, Switzerland, the Netherlands, Japan and Australia have a significant proportion of part-time employment, mainly among women. Southern Europe generally has the lowest level of part-time work.

Turning to sickness and maternity leave, in Table 17 we present information on the percentage of employees in receipt of publicly provided sickness and maternity benefit. Interestingly, in many countries we see that this percentage has fallen from 1980 to 1999. Then in Table 18, column 1, we convert this into average weeks of leave which we then compare with some other measures. These are reasonably closely correlated although the fact that the average weeks in receipt of benefits exceeds the absence measure provided by Alesina et al. (2005) for the US suggests the latter is understated. Nevertheless, there are significant differences across countries in the amount of sickness/maternity absence and, presumably, a significant proportion of those differentials is due to the variations in the rules governing benefit payments.

So legislation on paid vacation leave and sickness/maternity benefits obviously has some impact on working hours, but what about the underlying forces at work, including those which drive the legislation?

In Table 19, we present some panel regressions. Looking first at the tax variables, there is a positive impact on hours from the marginal rate facing women on zero hours where their husband is working. This is consistent with the fact that high marginal tax rates at zero hours discourage low hours jobs. By contrast, the marginal rate facing married women with working husbands earning two-thirds of the average wage has a negative impact on hours as might be expected. The same applies to the average tax wedge. However, the marginal tax rate facing a single earner appears to have a small positive effect, although it is hardly robust.

Employment protection has, if anything, a negative impact on hours, perhaps reflecting the fact that impressing managers with long hours is less of a requirement if jobs are secure⁵. Despite this, union density appears to have a robust positive impact on hours, consistent with the results reported in Bowles and Park (2005), Table 1, Column I. This is, however, inconsistent with the emphasis placed on the idea that trade unions encourage shorter working hours by Alesina et al. (2005).

The strong positive role of earnings dispersion also confirms the results of Bowles and Park (2005). In their view, this is strong evidence in favour of the “Veblen hypothesis”. The idea here, espoused in The Theory of the Leisure Class by Thorsten Veblen (1934), is that households consume goods not only for their own sake but to impress their neighbours. This, of itself, will tend to raise working hours and if earnings are more dispersed, additional work effort is required to make the appropriate impression⁶. An alternative hypothesis, put forward by Bell and Freeman (2001), is that increased earnings dispersion induces longer hours because it raises the incentives to work harder in order to get promoted and move up the earnings rankings. Whatever the driving force, there does appear to be a strong effect of earnings dispersion on working hours.

Earnings dispersion itself is, of course, influenced by labour market institutions, even when the dispersion of skills is taken into account. For example, Nickell (2004)

reports a simple cross-country regression which finds that the 90/10 earnings ratio is significantly negatively influenced by union coverage even when controlling for skill dispersion captured by the dispersion of test scores reported in the International Adult Literacy Survey (OECD, 2000). Koeniger et al. (2004), in a more extensive analysis, find that both trade union density and employment protection tend to reduce earnings dispersion and hence hours. This indirect effect of union density via earnings dispersion is -0.16^7 which does not quite offset the positive union density effect in column 2.

Overall, therefore, we find that various aspects of the tax system, employment protection and union density impact on working hours. Perhaps the only surprising result is that union density is positively related to hours, even when taking account of its negative impact on earnings dispersion.

5. Summary and Conclusions

The data we have been analysing are summarised in Table 20, where we show the history of labour input in the OECD countries. Before discussing various stories, it is worth remarking at the outset that simply comparing the US with “Europe” is a hopeless strategy because European labour markets are highly diverse. A second point to bear in mind is that large macroeconomic shocks have distorted the labour input series for some countries in some periods. Thus, in France, Germany, the Netherlands, Spain and the UK, there were particularly adverse macroeconomic shocks between 1973 and 1983. The same applies to Finland and Sweden in the early 1990s. By contrast, Ireland, the Netherlands and Spain were subject to strong favourable shocks in the 1990s.

The first story which is frequently used to explain cross-country variations in labour input is based on labour taxes, a recent example being Prescott (2004). The evidence we possess indicates that taxes cannot be the whole story. The tax story is inconsistent with the tax effects on labour inputs generated by microeconomic studies (Alesina et al. 2005) and those generated by cross-country studies (Nickell, 2003). For example, if we apply the tax data to the annual hours regressions in Table

19, we find that the contribution of tax changes to the changes in annual hours from the early 1980s to the late 1990s is very small, probably less than 10 per cent.

A second story would be in the same spirit as the tax story but adding in all the other elements of the social security system including early retirement benefits, sickness and disability benefits, unemployment benefits and so on. As we have seen, these are certainly good at explaining the changes in some aspects of the labour input, notably inactivity among men, both prime age and old, as well as a part of the changes in unemployment and female participation. But shifts in annual working hours are a major part of the story and here, while labour taxes have a significant impact, they explain only little of the overall picture.

A third story is that favoured by Alesina et al. (2005) who argue that the nexus of strong unions, generous welfare benefits and social democratic governments imply both high taxes and direct pressure towards less work. This latter is partly driven by work-sharing in response to adverse shocks and partly by the not unreasonable belief that long holidays are a good thing for workers, hence laws governing minimum levels of paid annual leave. In practice, all developed OECD countries bar the US have such laws, even those such as New Zealand and the UK where unionisation has collapsed. However, the work-sharing story applies clearly to Germany and particularly France, where incentives to reduce labour supply have consistently been applied in response to increases in unemployment, culminating in the imposition of the 35-hour week in France in the late 1990s.

However, it is hard to see how the same story applies to Sweden which has stronger unions, more generous welfare benefits, higher taxes and more social democratic governments than either France or Germany. Yet it has one of the highest employment rates in the OECD and only a small fall in labour input since the early 1970s. Thus, overall labour input in Sweden was 3% below that in France and Germany (average) in 1970 and 26% above in 2004. Both Italy and the Netherlands also had only small falls in labour input from 1973 to 2004, but for very different reasons. In both countries, labour input in 1973 was exceptionally low. In Italy this was because female participation was very low, with an employment rate of around 30%. Furthermore, the retirement age was 60 for men and 55 for women, at least five

years younger than in any other European country. For example, it was 67 for both men and women in Denmark and Sweden. So it is no surprise that in 1973 and, indeed, even in the 1960s, Italy had the lowest employment rate in the OECD. And it still does. Add in only a modest fall in annual hours and we find only a small fall in overall labour input. There is no strong element of work-sharing here. Indeed, the Italian labour market model, with minimal welfare benefits and very strong employment protection, places a great deal of weight on the position of the male head of household, which is not to be undermined either by the presence of a high earning wife or by the loss of a job. Thus the unemployment rate of husbands at 2% was, in 1992, among the lowest in the OECD (see OECD, 1994, Table 1.19).

While the labour input in the Netherlands was also exceptionally low in 1973, the subsequent history is completely different. The employment rate of women in 1973 was extraordinarily low in the Netherlands at 28.6% but by 2004 it had risen to 65.7%. As a consequence the overall employment rate had risen by 17 percentage points, by far the largest increase in the OECD. But the majority of women in employment in the Netherlands work part-time, so average annual hours fell dramatically. The overall consequence of this was that the total labour input had barely changed by 2004.

From all these different histories, it is clear that there is no simple story which can explain what is going on. If we take groups of apparently similar countries, even then we find considerable within group variations. For example, in the “Anglo-Saxon” group, Australia, Canada, New Zealand, UK, US, all have a high level of labour input at present. Yet while Australia and Canada continue to have a strong union presence and Canadian labour taxes have risen significantly, their labour input has risen whereas, in the UK, union membership has collapsed since the 1970s and labour taxes have not increased, yet labour input has fallen by nearly 12% since 1973. Compared to this group, the Scandinavian group Denmark, Finland, Sweden has, and always has had, very high employment rates, very strong unions and very rapid increases in labour taxes. Yet their labour inputs have not fallen rapidly and are still only around 10 per cent lower than in the Anglo-Saxon group. By contrast, the major countries of Continental Europe, France and Germany, where unions are weaker and taxes have risen less rapidly, work-sharing strategies have been embraced wholeheartedly and labour inputs have fallen dramatically in the last thirty years.

The upshot of this is that there is no clear, simple story which will explain the cross-country pattern of labour inputs over the last forty years. The incentives embedded in the tax and social security systems of the different countries are clearly important and explain many features of the pattern. But they are far from being the whole story. Trade unions, and indeed the population at large, have embraced work-sharing strategies in response to adverse shocks in France and Germany. This has helped to drive down annual working hours by around 500 since the early 1970s. This liking for work-sharing strategies is not, however, shared in the more corporatist societies of Denmark, Sweden and Finland perhaps because they have a different view of how the economy works (see Saint-Paul, 2004). Here the tax/legal framework is used to enhance work/life balance, with very high labour force participation and relatively stable annual hours, which have fallen little over the last thirty years despite numerous adverse shocks.

Broadly speaking, we can discern three groups of countries, Anglo-Saxon, France/Germany, Scandinavia where there is some sort of coherent story to be told about their pattern of labour input and the role of taxes, benefits, unions and other labour market institutions. But further countries, such as Italy and the Netherlands, do not fit into any of these three groups, and different explanations of their labour input patterns are required. Overall, while it is plain that the tax/benefit system and unions and other labour market institutions are important in explaining labour input patterns across the OECD, other factors are involved which are not easy to identify but lead to substantial differences from one country to another.

TABLE 1**Hours per Working Age Person Per Week and its Components (2002)**

	1	2	3
	Weekly hours worked per person of working age ($2 \times 3 \div 100$)	Employment/ Population of working age (%)	Annual hours actually worked by workers $\div 52$
Austria	20.5	68.2	30.1
Belgium	17.8	59.7	29.8
Denmark	21.5	76.4	28.1
Finland	22.5	67.7	33.2
France	17.5	62.2	28.1
Germany	18.2	65.3	27.8
Ireland	20.8	65.0	32.0
Italy	17.1	55.6	30.8
Netherlands	19.1	74.5	25.7
Norway	19.9	77.1	25.8
Portugal	22.2	68.1	32.6
Spain	20.8	59.5	34.9
Sweden	22.8	74.9	30.4
Switzerland	22.9	78.9	29.0
UK	23.6	72.7	32.5
Australia	24.3	69.2	35.1
Canada	23.8	71.5	33.3
Japan	23.6	68.2	34.6
NZ	25.3	72.4	34.9
US	24.9	71.9	34.6

Sources:

Employment/Population: OECD Employment Outlook, 2004, Table B.

Annual Hours: OECD Employment Outlook, 2004, Table F.

Some alternatives to these data are presented in the Appendix.

TABLE 2**Annual Hours actually Worked and its Components^a**

	1	2	3	4	5
	Annual hours actually worked by workers	Average weekly hours by those in work	Weeks worked per year by those in work (1 ÷ 2)	Vacations and holidays	Components of weeks worked Other ^b absences (52-3.-4.)
Austria	1567	38.4	40.8	7.2	4.0
Belgium	1547	36.3	42.6	7.1	2.3
Denmark	1462	36.3	40.3	7.4	4.3
Finland	1726	38.8	44.5	7.0	0.5
France	1459	36.2	40.3	7.0	4.7
Germany	1443	36.5	39.5	7.8	4.7
Ireland	1666	36.3	45.9	5.7	0.4
Italy	1599	37.4	42.8	7.9	1.3
Netherlands	1338	31.8	42.1	7.5	2.4
Norway	1342	37.3	36.0	6.5	9.5
Portugal	1697	40.4	42.0	7.3	2.7
Spain	1813	38.8	46.7	7.0	(1.7)
Sweden	1581	38.1	41.5	6.8	3.7
Switzerland	1510	37.5	40.3	6.0	5.7
UK	1692	38.2	44.3	6.5	1.2
US	1800	39.4	45.7	3.9	2.4

a. The data refer to all workers, both full-time and part-time, and to full year equivalents. So, hours per year refers to those working a full year. Numbers in parenthesis are negative.

b. Includes absences due to illness, maternity, labour disputes, training and other reasons.

Sources:

- Column 1. OECD Employment Outlook, 2004, Table F.
 Column 2. OECD Employment Outlook, 2004, Table 1.5.
 For US, Alesina et al. (2005), Table 1.
 Column 4. OECD Employment Outlook, 2004, Table 1.5.
 For US, Alesina et al. (2005), Table 3.

TABLE 3
Total Employment Rate (Women in brackets) %

	1964	1970	1973	1983	1990	2004
Austria			64.4 (47.7)	62.9 (47.1)		66.5 (60.1)
Belgium			60.7 (39.9)	54.6 (47.1)	54.4 (40.8)	60.5 (53.0)
Denmark			75.2 (61.2)	71.1 (65.0)	75.4 (70.6)	76.0 (72.0)
Finland	72.2 (61.4)	70.4 (61.5)	70.0 (62.3)	73.2 (69.0)	74.1 (71.5)	67.2 (65.5)
France		66.6 (46.4)	65.9 (47.9)	60.8 (48.3)	60.8 (50.9)	62.8 (56.9)
Germany		66.9 (46.3)	68.7 (49.7)	62.2 (47.8)	64.1 (52.2)	65.5 (59.9)
Ireland			59.9 (32.8)	53.9 (33.6)	52.1 (36.6)	65.5 (55.8)
Italy		52.0 (27.4)	55.1 (29.9)	54.5 (34.2)	52.6 (36.2)	57.4 (45.2)
Netherlands			56.3 (28.6)	52.1 (34.7)	61.1 (46.7)	73.1 (65.7)
Norway			67.7 (49.3)	73.9 (63.0)	73.0 (67.2)	75.6 (72.7)
Portugal			62.4 (30.5)	65.8 (49.8)	67.4 (55.4)	67.8 (61.7)
Spain			61.0 (32.5)	47.0 (26.4)	51.8 (31.8)	62.0 (49.0)
Sweden	70.8 (53.0)	72.3 (58.3)	73.6 (60.8)	78.5 (73.9)	83.1 (81.0)	73.5 (71.8)
Switzerland			77.7 (54.1)	73.8 (54.7)	78.2 (66.4)	77.4 (70.3)
UK			71.4 (52.7)	64.3 (52.6)	72.5 (62.8)	72.7 (66.6)
Australia			68.5 (46.4)	62.5 (47.0)	67.9 (57.1)	69.5 (62.6)
Canada			63.1 (44.1)	63.8 (53.1)	70.3 (62.7)	72.6 (68.4)
Japan		67.9 (52.8)	70.8 (53.4)	71.1 (55.7)	68.6 (55.8)	68.7 (57.4)
NZ			64.4 (39.1)	61.6 (42.8)	67.5 (58.6)	73.5 (66.5)
US	62.1 (40.6)	64.0 (46.3)	65.1 (48.0)	66.2 (56.1)	72.2 (64.0)	71.2 (65.4)

Sources: OECD Employment Outlook, 1995, Table A; 2005, Table B and OECD Labour Market Statistics

Note: Vertical lines reflect breaks in the series

Definition: Total employment ÷ population of working age (15-64)

TABLE 4
Average Annual Hours Worked Per Person in Employment

	1964	1970	1973	1979	1983	1990	1995	2004
Austria								1550 ³
Belgium					1696	1690		1522
Denmark					1597	1452		1454
Finland	2075	1982	1915	1870	1823	1771		1736
France	1939 ¹	1902	1846	1755	1663	1610	1558	1441
Germany²	2081	1956	1869	1758	1692	1566	1494	1426
Ireland					1902	1911	1823	1642
Italy	1908	1868	1788	1697	1674	1656	1616	1585
Netherlands¹		1830	1724	1591	1530	1433	1359	1312
Norway	1954	1784	1712	1514	1485	1432	1414	1363
Portugal						1858	1799	1694
Spain				2022	1912	1824	1815	1799
Sweden	1852	1730	1642	1530	1532	1561	1626	1585
Switzerland							1640	1556 ³
UK		1939	1923	1815	1713	1767	1734	1669
Australia				1904	1853	1866	1872	1816
Canada	2000	1892	1860	1800	1745	1757	1744	1751
Japan			2201	2126	2095	2031	1884	1789
NZ						1810	1842	1826
US	2013	1936	1922	1861	1851	1861	1873	1824

¹ Dependent Employment

² West Germany

³ 2003

Source: OECD Labour Market Statistics

TABLE 5
Unemployment, Inactivity and Employment by Age and Gender in 2004

	Unemployment (%)				Inactivity Rate (%)				Employment Rate (%)			
	Men		Women		Men		Women		Men		Women	
	25-54	55-64	25-54	55-64	25-54	55-64	25-54	55-64	25-54	55-64	25-54	55-64
Europe												
Austria	4.3	4.7	4.4	4.1	8.6	61.4	20.6	80.7	87.4	36.8	75.8	18.5
Belgium	6.0	4.1	7.4	2.8	8.9	59.0	25.7	78.2	85.7	39.3	68.8	21.2
Denmark	4.4	5.5	5.1	5.8	8.7	26.7	15.1	42.4	87.3	69.3	80.6	54.2
Finland	7.0	7.6	7.6	7.0	10.0	44.3	15.4	45.7	83.7	51.5	78.1	50.4
France	7.4	5.5	9.8	7.1	6.4	55.7	20.2	65.0	86.7	41.9	72.0	32.5
Germany	9.8	10.9	9.0	12.0	6.7	45.2	18.0	66.2	84.2	51.2	74.6	29.8
Ireland	4.5	2.9	3.1	1.5	8.3	33.4	32.1	65.5	87.6	64.7	65.8	34.0
Italy	5.2	4.1	9.2	4.0	8.7	56.0	36.4	79.6	86.5	42.2	57.8	19.6
Netherlands	3.7	3.9	4.4	3.1	6.3	41.3	22.0	66.4	90.2	56.4	74.5	32.5
Norway	4.3	1.5	3.3	0.6	9.9	25.7	17.2	36.9	86.2	73.2	80.0	62.7
Portugal	5.1	6.0	7.1	5.1	7.8	37.2	19.4	55.2	87.4	59.1	74.9	42.5
Spain	6.9	6.0	13.8	9.4	7.5	37.3	31.7	72.8	86.1	58.9	58.9	24.6
Sweden	5.7	5.8	5.2	4.0	9.9	24.0	14.7	29.8	85.0	71.6	80.8	67.4
Switzerland	3.5	3.1	4.6	3.4	4.3	20.9	19.2	44.3	92.3	76.7	77.1	53.8
UK	3.8	3.9	3.4	2.1	9.0	32.0	23.2	51.7	91.0	68.0	74.2	47.3
EU	6.5	6.2	8.3	6.4	7.6	44.8	24.5	65.5	86.4	51.8	69.2	32.3
Non-Europe												
Australia	3.9	4.2	4.3	3.3	10.9	35.6	28.0	56.9	85.7	61.7	68.9	41.7
Canada	6.1	6.1	5.9	5.7	8.4	34.0	18.4	51.0	86.0	62.0	76.8	46.2
Japan	4.3	5.3	4.5	3.0	3.8	17.5	31.9	49.9	92.1	78.1	65.0	48.6
NZ	2.5	2.4	3.3	2.6	8.4	21.8	24.8	40.4	89.4	76.4	72.7	58.1
US	4.6	3.9	4.6	3.7	9.5	31.3	24.7	43.7	86.3	66.0	71.8	54.3

Source: OECD Employment Outlook 2005, Table C

Notes: (i) The inactivity rate equals 100 minus the participation rate.

(ii) These data do not include those in prison. This makes little odds except in the US where counting those who are incarcerated would raise the inactivity rate among prime age men by close to 2 percentage points.

TABLE 6
Inactivity Rates among Prime Age Men

	1964	1971	1979	1983	1990	1999	2004
Austria						6.2	8.6
Belgium				5.6	7.8	8.2	8.9
Denmark				5.8	5.5	7.2	8.7
Finland	4.7	7.2	7.7	6.5	7.1	9.4	10.0
France	3.6	3.2	3.7	3.9	4.6	5.9	6.4
Germany		3.7	5.1	5.7	8.8	6.4	6.7
Ireland		2.8	5.0	4.4	8.2	8.4	8.3
Italy		5.9	6.7	4.3	5.9	9.5	8.7
Netherlands		5.1	7.0	6.6	6.6	6.5	6.3
Norway			7.2	4.9	7.7	8.2	9.9
Portugal			5.0	4.5	5.7	7.2	7.8
Spain			4.4	5.5	5.6	7.1	7.5
Sweden	3.7	5.3	4.7	5.0	5.3	9.7	9.9
Switzerland					2.2	2.8	4.3
UK		1.6 ^a	2.5	4.6	5.2	8.4	9.0
Australia		3.1	5.5	6.0	6.9	10.0	10.9
Canada			5.1	6.3	6.9	8.9	8.4
Japan	3.4	2.3	2.8	2.9	2.5	2.9	3.8
NZ					6.6	8.9	8.4
US	4.3	4.5	5.6	6.2	6.6	8.3	9.5
EU 15							7.6

^a = 1972

Source: OECD Labour Market Statistics. For the UK in 1972, we use the UK General Household Survey.

Note: Individuals in institutions are not included in these data. The numbers are generally small except for men in the US who are incarcerated who comprise close to 2 per cent of the working population.

Table 7

Inactivity Rate of Older Men, 55-64

	1964	1971	1979	1990	1995	1999	2004
Belgium			49.4	64.6	64.1	63.2 (51.0)	59.0
Denmark			32.8 ^a	30.9	32.1	38.1	26.7
Finland	16.4	26.8	43.7	52.9	58.4 (44.8)	55.0 (42.2)	44.3
France	20.6	25.4	30.1	60.7	58.8 (50.1)	57.3 (46.8)	55.7
Germany		21.5	33.1	44.1	47.3 (35.4)	46.2 (34.1)	45.2
Ireland		9.0	22.1	35.0	36.1 (30.8)	35.6 (25.0)	33.4
Italy		40.7	62.4 [?]	47.0	55.9 (35.8)	56.7 (55.0)	56.0
Netherlands		19.4	34.7	54.2 [?]	58.6 (49.6)	51.6 (31.1)	41.3
Norway		16.7	18.0	27.2	27.7 (24.4)	25.5 (19.0)	25.7
Portugal		18.3	24.4	33.5	39.3 (30.2)	36.0 (20.3)	37.2
Spain		15.4	22.4	37.5	45.1 (39.9)	42.2 (27.8)	37.3
Sweden	11.5	15.3	20.8	24.5	29.6 (25.0)	27.7 (22.7)	24.0
UK		11.6	30.0 ^a	31.9	37.6 (34.6)	36.5 (30.8)	32.0
Australia		15.6	30.5	36.8	39.1 (39.1)	38.3 (34.4)	35.6
Canada		16.7	23.7 ^a	36.0	41.1 (39.7)		34.0
Japan	13.5	12.9	14.8	16.7	15.2 (11.2)	14.8 (9.8)	17.5
US	16.0	17.9	27.2	32.2	34.0 (31.1)	32.1 (30.0)	31.3

? refers to a significant break in the series. a = 1983.

The figures in parentheses in the 1995 column refer to the estimated inactivity rate were the pension system to be made actuarially neutral up to age 64 (see Blondal and Scarpetta, 1998, Table V.6.)

The figures in parentheses in the 1999 column refer to the estimated inactivity rate were early retirement schemes to be removed and actuarial neutrality to be introduced up to 64. We use the average of low case and high case in Table 3 of Duval (2003).

Sources: OECD Employment Outlook. Table C, various issues, Blondal and Scarpetta (1998).
Tables V.1 and V.6 and Duval (2003), Table 3.

TABLE 8**Implicit Tax Rates on Working for Five More Years (1999) (%)**

	At age 55		At age 60	
	Normal old age pension	Early Retirement	Normal old age pension	Early Retirement
Australia	1	1	1	1
Belgium	9	57	47	72
Canada	5	5	13	13
Finland	12	70	22	75
France	-38	56	83	83
Germany	10	48	24	51
Ireland	16	37	16	37
Italy	46	46	115	115
Japan	6	6	39	39
Netherlands	13	77	93	93
Norway	15	15	15	28
Portugal	4	52	14	76
Spain	22	58	22	69
Sweden	18	21	1	19
UK	8	22	14	22
US	5	5	5	5

Source: Duval, R. (2003), Figures 4, 7, 8.

Notes: To compute implicit tax rates.

- Define expected pension wealth/earnings at age R .

$$= PWY_R = \sum_{i=R}^{105} (s_i R_i) / (1+r)^{i-R} \text{ where}$$

r = real interest rate, s_i = probability of being alive at age i conditional on being alive at R .

- Define net change in expected pension wealth over 5 year period of working = $DPWY_R =$

$$\frac{s_{R+5} PWY_{R+5}}{(1+r)^5} - PWY_R - \sum_{i=R}^{R+4} (s_i C_i / Y) / (1+r)^{i-R}$$

C_i / Y = total contributions to pension system over earnings at R .

- Average implicit tax rate = $DPWY_R / 5$.

TABLE 9

The Impact of Implicit Taxes on the Participation of Older Men 1967-99

Dependent Variable	<u>Part.55-59-Part.50-54</u> Part.50-54	<u>Part.60-64-Part.55-59</u> Part.55-59
Implicit Tax Rate	-0.11 (7.2)	-0.17 (4.9)
Unemployment Rate (age 25-54)	-0.12 (1.9)	-0.90 (6.0)
Standard Retirement Age		1.63 (3.3)
Country effects	√	√
Time effects	√	√
Countries	22	22
Observations	484	471
R^2	0.92	0.89

Source: Duval, R. (2003), Table 2.

Notes: $\frac{Part.x - Part.y}{Part.y}$ = change in participation rate from age y to age x as a proportion of the participation rate at age y .

TABLE 10**Inactivity Rates Among Prime Age Women (%)**

	1964	1971	1979	1983	1990	1995	2004
Belgium	-	-	-	45.9	39.2	31.8	25.7
Denmark	-	-	-	16.0	12.2	17.9	15.1
Finland	31.9	28.2	18.8	14.2	13.6	14.9	15.4
France	54.1	49.1	37.0	33.0	27.8	22.7	20.2
Germany	-	51.8	44.6	41.7?	36.6?	27.9	18.0
Ireland	-	77.1	72.4	67.2	54.6?	45.4	32.1
Italy	-	71.3	61.1	57.6	46.1	46.3	36.4
Netherlands	-	77.2	66.0	57.6?	42.1?	34.3	22.0
Norway	-	-	34.0	26.8	20.8?	19.6	17.2
Portugal	-	-	45.2?	35.7	30.6?	24.8	19.4
Spain	-	-	69.8	66.7	53.1	44.5	31.7
Sweden	44.5	33.5	18.9	13.0?	9.3?	13.8	14.7
UK	-	-	-	33.3	27.0	26.0	23.2
Australia	-	55.4	48.6	46.5	33.4	30.8	28.0
Canada	-	-	41.5	34.4	24.6	24.1	18.4
Japan	44.1	46.2	43.8	40.5	35.8	34.8	31.9
US	55.6	49.7	37.7	32.9	26.0	24.4	24.7

? refers to a significant break in the series.

Source: OECD Employment Outlook, Table C, various issues. OECD Labour Market Statistics.

TABLE 11**Percentage Marginal Tax Rates Facing Married Women**

	Husband 100% AW Wife 0% AW Two children		Husband 100% AW Wife 67% AW Two children	
	1981-86	1996-99	1981-86	1996-99
Austria	-	0	-	43.0
Belgium	44.5	48.2	52.3	55.9
Denmark	41.5	48.0	30.9	51.3
Finland	0	0	32.3	45.1
France	17.9	24.4	24.1	27.3
Germany	39.0	49.5	40.2	53.1
Ireland	7.1	0	70.1	30.0
Italy	8.6	9.5	28.0	34.0
Netherlands	34.4	5.1	34.1	45.5
Norway	20.5	13.5	32.5	35.8
Portugal	11.2	15.7	16.6	25.8
Spain	0	0	21.3	29.8
Sweden	0	0	29.8	38.8
Switzerland	26.6	22.3	33.3	30.7
UK	0	0	38.4	33.3
Japan	21.9	18.4	18.1	16.3
USA	30.8	31.6	30.8	29.9

These include household income and social security taxes less cash transfers.

AW = Average Wage. Computed using the tax rules of each country by looking at the tax paid on an annual income for the wife of X and of $X + 1$ where X is 0% or 67% of the average annual earnings of production workers, given the husband earns 100% of the average annual earnings of production workers. Author's calculations based on an OECD template.

TABLE 12**Participation Rate of Women (25-54) in the OECD (1981-2001)**

	<u>Panel Regressions</u>		
	1.	2.	3.
Marginal Tax Rate, Spouse (100,0)	-0.18 (4.2)	-0.14 (3.7)	-0.11 (3.4)
Marginal Tax Rate, Spouse (1000,67)	-0.15 (5.1)	-0.21 (6.6)	-0.11 (3.8)
Average Tax Wedge	0.013 (0.3)	0.24 (4.3)	0.13 (2.4)
Employment Protection (index 0-5)	-0.050 (4.8)	-0.070 (6.2)	-0.065 (6.3)
Union Density	-0.23 (4.7)	-0.090 (2.3)	0.030 (0.8)
Business Sector Labour Productivity (log)		0.31 (6.5)	-0.21 (4.5)
Male unemployment rate (log)		0.025 (3.7)	-0.026 (4.4)
Real Expenditure on cash benefits per child (0-14)			0.032 (4.6)
Real Expenditure on parental leave per child (0-3)			0.022 (4.2)
Real Expenditure on family services per child (0-14)			0.033 (3.5)
Countries	17	17	17
Observations	315	283	283
Year dummies	√	√	√
Country dummies	√	√	√
R^2	0.94	0.96	0.97

Notes: Marginal tax rates: As in Table 11.

Average tax wedge: This is the average labour tax rate, the sum of the average payroll, income and consumption tax rates. Computed by taking the average tax rates from OECD Taxing Wages Statistics including employers' social security contributions and adding the average consumption tax rate ((Indirect taxes – subsidies) ÷ consumption) from OECD National Accounts.

Employment protection: An Index referring to regular employment. Details of its computation are variable in OECD Employment Outlook, 2004, Chapter 2. The numbers may be found in the first three columns of Table 2.A2.4.

Union density : ratio of employed union members to employees. See Nickell et al. 2005, p. 23.

Business sector labour productivity : output (in constant US dollars) per worker in the business sector. OECD male unemployment rate : OECD Labour Market Statistics.

Real expenditure on cash benefits: Annual public expenditure in real dollars on family cash benefits per child age 0-14 times 10^{-3} .

Real expenditure on parental leave: Annual public expenditure in real dollars on maternity and parental leave per child aged 0-3 times 10^{-3} .

Real expenditure on family services: Annual public expenditure in real dollars on family services per child aged 0-14 time 10^{-3} .

These final three variables were most kindly provided by Sakiko Tanaka. (See Tanaka, 2005)

TABLE 13**Women's Part-Time Work: Voluntary or Involuntary, 1996**

	1.	2.	(2.÷1.) x 100
	Percentage of working women who are part-time	Percentage of working women who are voluntarily part-time	
Austria	21.7	21	97
Belgium	32.1	21	65
Denmark	24.2	18	74
Finland	11.3	6	53
France	24.1	15	62
Germany	29.9	27	90
Ireland	26.4	17	64
Italy	20.9	11	53
Netherlands	55.5	45	81
Portugal	15.1	5	33
Spain	16.2	8	49
Sweden	23.5	20	85
UK	41.4	30	72
Australia	40.0	26	65
Canada	28.9	17	59
Japan	36.7	37	100
US	20.2	10	50

Note. In Europe voluntary includes women who say they did not want to work FT and did not say they worked PT because of education, sickness/disability or because they were unable to find a FT job. Outside Europe, the definition is broader.

Source: OECD Employment Outlook, 2001, Table 4.8.

TABLE 14**Unemployment (Standardised Rate) %**

	1960-64	1965-72	1973-79	1980-87	1988-895	1996-99	2000-1	2002	2004
Austria	1.6	1.4	1.4	3.1	3.6	4.3	3.7	4.2	4.5
Belgium	2.3	2.3	5.8	11.2	8.4	9.2	6.8	7.3	7.8
Denmark	2.2	1.7	4.1	7.0	8.1	5.3	4.4	4.6	5.4
Finland	1.4	2.4	4.1	5.1	9.9	12.2	9.4	9.1	8.9
France	1.5	2.3	4.3	8.9	10.5	11.5	9.0	8.9	9.7
Germany (W)	0.8	0.8	2.9	6.1	5.6	7.4	6.4	6.8	7.7
Ireland	5.1	5.3	7.3	13.8	14.7	8.7	4.0	4.4	4.5
Italy	3.5	4.2	4.5	6.7	8.1	9.9	8.4	7.4	6.9
Netherlands	0.9	1.7	4.7	10.0	7.2	4.5	2.6	2.8	4.6
Norway	2.2	1.7	1.8	2.4	5.2	3.8	3.6	3.9	4.4
Portugal	2.3	2.5	5.5	7.8	5.4	6.0	4.1	5.0	6.7
Spain	2.4	2.7	4.9	17.6	19.6	19.4	13.5		
Spain*						15.8	11.0	11.4	10.8
Sweden	1.2	1.6	1.6	2.3	5.1	8.6	5.5	4.9	6.4
Switzerland	0.2	0.0	0.8	1.8	2.8	3.5	2.6	3.2	4.4
UK	2.6	3.1	4.8	10.5	8.8	6.8	5.2	5.1	4.6
Australia	2.5	1.9	4.6	7.7	8.7	7.9	6.5	6.4	5.5
Canada	5.5	4.7	6.9	9.7	9.5	8.7	7.0	7.7	7.2
Japan	1.4	1.3	1.8	2.5	2.5	3.9	4.9	5.4	4.7
New Zealand	0.0	0.3	0.7	4.7	8.1	6.8	5.7	5.2	3.9
USA	5.5	4.3	6.4	7.6	6.1	4.8	4.4	5.8	5.5

Notes

As far as possible, these numbers correspond to the OECD standardised rates and confirm to the ILO definition. The exception here is Italy where we use the US Bureau of Labour Statistics “unemployment rates on US concepts”. In particular we use the correction to the OECD standardised rates made by the Bureau prior to 1993. This generates a rate which is 1.6 percentage points below the OECD standardised rate after 1993. The rates referred to in Spain* refer to recently revised ILO rates. For earlier years we use the data reported in Layard et al. (1991)). For later years we use the OECD Employment Outlook (2005, Table A).

TABLE 15**Minimum Annual leave Legislation**^a

	1964	1984	1992	2003^c	Public Holidays (1991) (days)
Austria	2	4	5	5 (5)	13
Belgium	2	4	4	4	10-13.5
Denmark	3	5	5	5 (6)	10
Finland	3	4	5	4 (5)	5-9
France	3	5	5	5 (5)	11
Germany	2.5	3	3	4 (5.8)	11 + 4 regional
Ireland	2	3	3	4 (4)	8
Italy	0 ^b	0 ^b	0 ^b	4 (5.6)	11
Netherlands	2.5	3	4	4 (6.2)	9
Norway	3	4.2	4.2	4.2 (5)	10
Portugal	1	3-4.4	3-4.4	4.4 (4.9)	13
Spain	1	5	5	4.2	13
Sweden	4	5	5.4	5 (6.6)	9
Switzerland	1	2	4	na	8
UK	0	0	0	4 (4.9)	8 + 3 regional
Australia	3	4	4	4	9
Canada	1	2	2	na	10
Japan	1	1	2	na	12
NZ	2	3	3	na	11
US	0	0	0	0	10

a. In weeks. If legislation is in days, divide by 5.

b. Right to paid annual leave established in legislation but length determined by collective bargaining

c. In parentheses is the average collectively agreed annual paid leave.

Sources: OECD (1994) Jobs Study II, Table 6.12. European Industrial Relations Observatory.

TABLE 16**Part-Time Employment as a Proportion of Total Employment (%)**

	1973	1979	1983	1990	1995	2003
Austria	6.4	7.6	8.4	-	11.1	13.6
Belgium	3.8	6.0	8.1	13.5	14.5	17.7
Denmark		22.7	23.8	19.2	16.7	15.8
Finland		6.7	8.3	7.6	8.4	11.3
France	5.9	8.2	9.7	12.2	12.5	12.9
Germany	10.1	11.4	12.6	13.4	14.2	19.6
Ireland		5.1	6.6	10.0	13.0	18.8
Italy	6.4	5.3	4.6	8.9	10.5	12.0
Netherlands		16.6	21.4	28.2	27.3	34.5
Norway	20.8	25.3	29.0	21.8	27.5	21.0
Portugal		7.8		7.6	8.6	10.0
Spain				4.6	7.1	7.8
Sweden		23.6	24.8	14.5	15.1	14.1
Switzerland				22.1	23.8	25.12
UK	16.0	16.4	19.4	20.1	22.2	23.3
Australia	11.9	15.9	17.5	22.6	30.8	27.9
Canada	9.7	12.5	15.4	17.0	18.6	18.9
Japan	13.9	15.4	16.2	19.2	21.3	26.0
NZ	11.2	13.9	15.3	19.7	21.5	22.3
US	15.6	16.4	18.4	14.1	13.3	13.2

Source: OECD

Note

Part-time employment refers to persons who usually work less than 30 hours per week in their main job.

TABLE 17**Sickness and Maternity/Paternity Benefit Recipients as a Percentage of Employees**

	Sickness benefit		Maternity/Paternity benefit		Total	
	1980	1999	1980	1999	1980	1999
Austria	3.8	2.9	1.8	2.9	5.6	5.8
Belgium	2.4	1.8	0.2	0.4	2.6	2.2
Denmark	5.8	6.0	0.6	2.1	6.4	8.1
France	3.7	3.0	0.8	3.2	4.5	6.2
Germany	4.1	3.8	0.3	0.3	4.4	4.1
Ireland	5.8	3.0	0.4	0.4	6.2	3.4
Netherlands	6.2	4.8	0	0	6.2	4.8
Spain	0.5	0.7	0	0	0.5	0.7
Sweden	6.1	7.9	2.0	2.8	8.1	10.7
UK	1.8	1.3	0.5	0.4	2.3	1.7
Australia	1.6	2.1	0	0	1.6	2.1
Canada	0.2	0.3	0.3	0.6	0.5	0.9
Japan	3.1	1.8	0.1	0.2	3.2	2.0
NZ	0.7	2.1	0	0	0.7	2.1
US	2.8	2.9	0	0	2.8	2.9

Sources: Benefit recipients/Population of working age, OECD Employment Outlook, 2003, Table 4.A1.1. Employment/Population, OECD Labour Market Statistics.
Divide the former by the latter.

TABLE 18**Estimates of Weeks per Year for Employees accounted for by Sickness and Maternity/Paternity Leave**

	Proportion of ^a employees who are sickness or maternity benefit recipients time 52	Other absences ^b (table 2)	Absences due to ^c sickness and maternity
	1999	2002	2002
Austria	3.0	4.0	5.2
Belgium	1.1	2.3	4.2
Denmark	4.2	4.3	3.6
France	3.2	4.7	3.8
Germany	2.1	4.7	2.8
Ireland	1.8	0.4	2.0
Netherlands	2.5	2.4	4.4
Spain	0.4	(1.7)	2.4
Sweden	5.6	3.7	7.6
UK	0.9	1.2	3.2
Australia	1.1	-	-
Canada	0.5	-	-
Japan	1.0	-	-
NZ	1.1	-	-
US	1.5	2.4	0.9

Sources: a) Table 17, final column x 52/100

b) Table 2, column 5

c) OECD Employment Outlook, 2004, Table 1.5. Weeks of absence due to sickness and maternity are derived by doubling the last column of Table 1.5. This adjustment reflects the OECD best guess of the correction for under-reporting. For the US, we take the number from Alesina et al. (2005), Table 3.

TABLE 19**Annual Hours Worked by the Employed in the OECD (1981-99)**

	Dependent Variable, log (hours)		
	1.	2.	3.
Marginal tax rate, spouse (100,0)	0.086 (2.1)	0.17 (4.1)	0.14 (4.0)
Marginal tax rate, spouse (100,67)	-0.072 (2.7)	-0.16 (3.8)	-0.14 (3.7)
Average tax wedge	-0.16 (3.4)	-0.033 (0.6)	-0.12 (2.4)
Employment- protection (index, 0-5)	-0.012 (1.2)	-0.12 (3.5)	-0.038 (1.2)
Marginal tax rate, single (100)	0.055 (1.9)	0.062 (1.9)	-0.021 (0.7)
Union density	0.11 (2.3)	0.21 (2.5)	0.21 (1.8)
$Ln \left(\frac{50^{th} \text{ percentile}}{10^{th} \text{ percentile}} \right)$		0.70 (7.4)	0.79 (9.9)
$Ln \left(\frac{90^{th} \text{ percentile}}{50^{th} \text{ percentile}} \right)$		0.22 (2.2)	0.17 (2.0)
Business sector labour productivity (log)			0.37 (7.3)
Male unemployment rate (log)			0.013 (2.0)
Countries	17	15	15
Observations	276	177	186
Year dummies	√	√	√
Country dummies	√	√	√
R^2	0.94	0.94	0.97

Notes

Marginal tax rate, single. Computed using tax rules by looking at taxes paid by a single person on an annual income of x and of $x + 1$ where x is the annual average earnings of production workers.

50/10, 90/50 percentile ratios in the earnings distribution. OECD.

Other variables are defined in Table 12.

TABLE 20**Total Labour Input**

Weekly hours worked per person of working age

	1964	1970	1973	1983	1990	2004	% change from 1983 (1973)
Austria						19.8	
Belgium				17.8	17.7	17.7	-0.6
Denmark				22.0	21.1	21.3	-1.5
Finland	28.8	26.8	25.8	25.7	25.2	22.4	-12.8 (-13.2)
France		24.4	23.4	19.4	18.8	17.4	-10.3 (-25.6)
Germany		25.2	24.7	20.2	19.3	18.0	-10.9 (-27.1)
Ireland				19.1	19.1	20.7	8.4
Italy		18.7	18.9	17.4	16.8	17.5	0.6 (-7.4)
Netherlands			18.7	15.3	16.8	18.4	20.3 (-1.6)
Norway			22.3	21.1	20.1	19.8	-6.2 (11.2)
Portugal					24.0	22.1	
Spain				17.3	18.2	21.4	23.7
Sweden	25.2	24.1	23.2	23.1	24.9	22.4	-3.0 (-3.4)
Switzerland						23.2	
UK			26.4	21.2	24.6	23.3	9.9 (-11.7)
Australia				22.3	24.4	24.3	9.0
Canada			22.6	21.4	23.8	24.4	14.0 (8.0)
Japan			30.0	28.6	26.8	23.6	-17.5 (-21.3)
NZ					23.5	25.8	
US	24.0	23.8	24.1	23.6	25.8	25.0	5.9 (3.7)

Source: Based on Tables 3 and 4. Annual hours ÷ 52 x employment rate.

APPENDIX

Appendix Table 1

Alternative to Table 2

	1.	2.	3.	4.	5.
	Average weekly hours by those in work	Annual weeks worked by those in work (52-3-4) and (annual hours)	Holidays and vacation weeks	<u>Other Absences</u>	
				Total	Of which sickness/maternity
Austria	38.4	41.5 (1594)	7.2	3.3	2.6
Belgium	36.3	42.0 (1525)	7.1	2.9	2.1
Denmark	36.3	40.7 (1477)	7.4	3.9	1.8
Finland	38.8	40.6 (1575)	7.0	4.4	2.1
France	36.2	42.3 (1531)	7.0	2.7	1.9
Germany	36.5	42.0 (1533)	7.8	2.2	1.4
Ireland	36.3	44.7 (1623)	5.7	1.6	1.0
Italy	37.4	42.0 (1571)	7.9	2.1	1.0
Netherlands	31.8	40.6 (1291)	7.5	3.9	2.2
Norway	37.3	39.6 (1477)	6.5	5.9	3.6
Portugal	40.4	43.7 (1765)	7.3	1.7	1.2
Spain	38.8	43.3 (1680)	7.0	1.7	1.6
Sweden	38.1	39.2 (1494)	6.8	6.0	3.8
Switzerland	37.5	43.3 (1628)	6.0	2.6	1.1
UK	38.2	42.1 (1608)	6.5	3.4	1.6
US	39.4	46.2 (1820)	3.9	1.9	1.0

Sources: Column 1. OECD Employment Outlook, 2004, Table 1.5. US, Alesina et al. (2005) Table 3.

Column 3. OECD Employment Outlook, 2004, Table 1.5. US, Alesina et al. (2005) Table 3

Column 4. OECD Employment Outlook, 2004, Table 1.5, cols. (h) + (i). US, Alesina et al. (2005), Table 3, col. 5.

This table is based on a different method of computing annual weeks worked.

Appendix Table 2

Another Alternative to Table 2

	1.	2.	3.	4.	5.
	Ave. weekly hours by those in work	Annual weeks worked by those in work (52-3-4) and (annual hours)	Holidays and vacation weeks	<u>Other Absences</u> Total	Of which sickness/maternity
Austria	38.4	39.1 (1501)	7.2	5.9	5.2
Belgium	36.3	39.9 (1448)	7.1	5.0	4.2
Denmark	36.3	38.9 (1408)	7.4	5.7	3.6
Finland	38.8	38.5 (1494)	7.0	6.5	4.2
France	36.2	40.4 (1462)	7.0	4.6	3.8
Germany	36.5	40.6 (1473)	7.8	3.6	2.8
Ireland	36.3	43.7 (1586)	5.7	2.6	2.0
Italy	37.4	41.0 (1533)	7.9	3.1	2.0
Netherlands	31.8	38.4 (1221)	7.5	6.1	4.4
Norway	37.3	36.0 (1343)	6.5	9.5	7.2
Portugal	40.4	41.8 (1689)	7.3	2.9	2.4
Spain	38.8	41.7 (1618)	7.0	3.3	3.2
Sweden	38.1	35.4 (1349)	6.8	9.8	7.6
Switzerland	37.5	42.3 (1586)	6.0	3.7	2.2
UK	38.2	40.5 (1547)	6.5	5.0	3.2
US	39.4	45.2 (1781)	3.9	2.9	2.0

Sources: Columns 1. and 3. As previous Table.

Columns 4. and 5. OECD Employment Outlook, 2004, Table 1.5 cols. (h) + (i) + (j) and 2 x col. (j). US, Alesina et al. (2005), Table 3 col. 3 + 2 x col. 5 and 2 x col. 5.

In this table, the survey data on sickness and maternity are doubled. This is an adjustment suggested by OECD staff. In our view, some of these numbers seem implausible.

Endnotes

1. Thus, they work more hours per year, on average, than workers in any other OECD country aside from the Czech Republic, Greece, Mexico, Poland, the Slovak Republic (OECD, 2005, Table F). However US annual hours are of the same order of magnitude as those in Australia and New Zealand.
2. This, of course, refers only to market work. It is sometimes argued that a great deal of market activity in some countries is replicated by non-market activities in others, partly for tax reasons. For example, far more time in Germany is spent on food preparation in the home than in the US, where a far higher proportion of food expenditure is in restaurants (see Freeman and Schettkat, 2001). However, the data reported in Alesina et al. (2005), Table 17, indicates that the Germans spend much less time in the home on child care and housework than Americans and that they spend more or less equal amounts of time on leisure activities.
3. Labour productivity may be affected by changes in female participation, and unemployment rates may easily be influenced by omitted factors which also affect participation.
4. Annual hours refers to the hours worked in a year by workers who work for the whole year (or full year equivalent workers). They may work part-time, however. Also, it refers to hours actually worked, not hours paid for.
5. Perhaps because, if jobs are secure, unauthorised absence is less likely to be punished by job loss.
6. Bowles and Park (2005) provide a formal model of this effect.
7. In Koeniger (2004), Table 3, columns (5), (6), we find the coefficient on union density is -0.32 in the 90/50 equation and -0.13 in the 50/10 equation. So the total effect of union density Table 19, column 2 is $0.21 - (0.32 \times 0.22 + 0.13 \times 0.70) = 0.21 - 0.16 = 0.05$.

References

- Alesina, A. F., Glaeser, E. L. and Sacerdote, B. (2005), "Work and Leisure in the US and Europe: Why so Different?", CEPR Discussion Paper 5140, Centre for Economic Policy Research, London.
- Blöndal, S. and Scarpetta, S. (1998), "The Retirement Decision in OECD Countries", OECD Economics Department W.P. 202, OECD, Paris.
- Bound, J. and Burkhauser, R.V. (1999), "Economic Analysis of Transfer Programs Targeted on People with Disabilities", in Ashenfelter, O. and Card, D (eds.), *Handbook of Labor Economics* (Amsterdam: North Holland).
- Bowles, S. and Park, Y. (2005), "Emulation, Inequality and Work Hours: Was Thorsten Veblen Right", *Economic Journal*, (Features) 115, November, F397 – F412.
- Daveri, F. and Tabellini, G. (2000), "Unemployment, Growth and Taxation in Industrial Countries", *Economic Policy*, April, 49-90.
- Davis, S. J. and Henrekson, M. (2004), "Tax Effects on Work Activity, Industry Mix and Shadow Economy Size: Evidence from Rich-Country Comparisons", NBER Working Paper No 10509, National Bureau of Economic Research, Cambridge, Mass.
- Duval, R. (2003), "Retirement Behaviour in OECD Countries: Impact of Old-Age Pension Schemes and other Social Transfer Programmes", *OECD Economic Studies*, 37, OECD, Paris.
- Faggio, G. and Nickell, S. (2003), "The Rise in Inactivity Among Adult Men", in Dickens, R., Gregg, P. and Wadsworth, J. (eds.), *The Labour Market under New Labour* (Basingstoke, Hants: Palgrave MacMillan).
- Freeman, R.B. and Schettkat, R. (2001), "Marketization of Production and the US-European Employment Gap", *Oxford Bulletin of Economics and Statistics* (Special Issue) 63, 647-670.
- Jaumotte, F. (2003), "Labour Force Participation of Women: Empirical Evidence on the Role of Policy and Other Determinants in OECD Countries", *OECD Economic Studies*, 37, 52-108
- Koeniger, W., Leonardi, M. and Nunziata, L. (2004), "Labour Market Institutions and Wage Inequality", IZA Discussion Paper 1291, September (IZA Bonn).
- Layard, R., Nickell, S. and Jackman, R. (1991), *Unemployment: Macroeconomic Performance and the Labour Market* (Oxford: Oxford University Press).
- Nickell, S. (1997), "Unemployment and Labor Market Rigidities: Europe versus North America", *Journal of Economic Perspectives*, 11(3), Summer, 55-74.
- Nickell, S. (2003), "Labour Market Institutions and Unemployment in OECD Countries", *DICE Report, Journal for Institutional Comparisons* 1 (2), Summer, 13-26.

- Nickell, S. (2003), "Work and Taxes", forthcoming in Agell, J and Sorensen, P. B. (eds.) *Tax Policy and Labor Market Performance* (Cambridge, Mass: MIT Press), CESifo W.P. 1109, December CESifo, Munich.
- Nickell, S., Nunziata, L., Ochel, W. and Quintini, G. (2003), "The Beveridge Curve, Unemployment, and Wages in the OECD from the 1960s to the 1990s", in Aghion, P., Frydman, R., Stiglitz, J., Woodford, M. (eds), *Knowledge, Information and Expectations in Modern Macroeconomics in Honor of Edmund S. Phelps* (Princeton: Princeton University Press).
- Nickell, S. (2004), "Poverty and Worklessness in Britain", *Economic Journal*, 114 March.
- Nickell, S., Nunziata, L. and Ochel, W. (2005), "Unemployment in the OECD Since the 1960s. What do we Know?", *Economic Journal*, 115, January, 1-27.
- Nicoletti, G. and Scarpetta, S. (2002), "Interactions between Product and Labour Market Regulations: Do they Affect Employment? Evidence from OECD Countries", mimeo, OECD, Paris.
- OECD (1990), *Employment Outlook* (Paris, OECD)
- OECD (1994), *Jobs Study, Part I* (Paris: OECD)
- OECD (2000), *Literacy in the Information Age* (Paris: OECD)
- OECD (2004), *Employment Outlook* (Paris OECD)
- Prescott, E. C. (2004), "Why do American Work So Much More than Europeans?", *Federal Reserve Bank of Minneapolis Quarterly Review*, 28(1), July, 2-13.
- Saint-Paul, G. (2004), "Why are European Countries Diverging in their Unemployment Experience?", *Journal of Economic Perspectives*, 18, (4), Fall, 49-68.
- Tanaka, S. (2005), "Parental Leave and Child Health Across OECD Countries", *Economic Journal (Features)*, 115, F7-F28.
- Veblen, T. (1934), *The Theory of the Leisure Class* (New York: Modern Library).

CENTRE FOR ECONOMIC PERFORMANCE
Recent Discussion Papers

729	Saul Lach Mark Schankerman	The Impact of Royalty Sharing Incentives or Technology Licensing in Universities
728	Philippe Aghion Robin Burgess Stephen Redding Fabrizio Zilibotti	The Unequal Effects of Liberalization: Evidence from Dismantling the License Raj in India
727	Richard E. Baldwin Frédéric Robert-Nicoud	Trade and Growth with Heterogeneous Firms
726	Gustavo Crespi Chiara Criscuolo Jonathan Haskel	Productivity, Exporting and the Learning-by- Exporting Hypothesis: Direct Evidence from UK Firms
725	Giovanni Olivei Silvana Tenreyro	The Timing of Monetary Policy Shocks
724	Ghazala Yasmeen Azmat	The Incidence of an Earned Income Tax Credit: Evaluating the Impact on Wages in the UK
723	Sharon Belenzon	Basic Research and Sequential Innovation
722	Daron Acemoglu Philippe Aghion Claire Lelarge John Van Reenen Fabrizio Zilibotti	Technology, Information and the Decentralization of the Firm
721	Sharon Belenzon	Knowledge Flow and Sequential Innovation: Implications for Technology Diffusion, R&D and Market Value
720	Rafael Gomez Konstantinos Tzioumis	What Do Unions Do to CEO Compensation?
719	Ralph Ossa	A Gold Rush Theory of Economic Development
718	Nick Bloom	The Impact of Uncertainty Shocks: Firm Level Estimation and a 9/11 Simulation

- | | | |
|-----|--|---|
| 717 | Holger Breinlich | Trade Liberalization and Industrial Restructuring through Mergers and Acquisitions |
| 716 | Nick Bloom
John Van Reenen | Measuring and Explaining Management Practices Across Firms and Countries |
| 715 | Mirko Draca
Stephen Machin
John Van Reenen | Minimum Wages and Firm Profitability |
| 714 | Matteo Bugamelli
Francisco Paternò | Do Workers' Remittances Reduce the Probability of Current Account Reversals? |
| 713 | Alex Bryson | Union Free-Riding in Britain and New Zealand |
| 712 | Marco Manacorda
Carolina Sanchez-Paramo
Norbert Schady | Changes in Returns to Education in Latin America: the Role of Demand and Supply of Skills |
| 711 | Claudia Olivetti
Barbara Petrongolo | Unequal Pay or Unequal Employment? A Cross-Country Analysis of Gender Gaps |
| 710 | Hilary Steedman | Apprenticeship in Europe: 'Fading' or Flourishing? |
| 709 | Florence Kondylis | Agricultural Returns and Conflict: Quasi-Experimental Evidence from a Policy Intervention Programme in Rwanda |
| 708 | David Metcalf
Jianwei Li | Chinese Unions: Nugatory or Transforming? An <i>Alice</i> Analysis |
| 707 | Richard Walker | Superstars and Renaissance Men: Specialization, Market Size and the Income Distribution |
| 706 | Miklós Koren
Silvana Tenreyro | Volatility and Development |
| 705 | Andy Charlwood | The De-Collectivisation of Pay Setting in Britain 1990-1998: Incidence, Determinants and Impact |

The Centre for Economic Performance Publications Unit
Tel 020 7955 7673 Fax 020 7955 7595 Email info@cep.lse.ac.uk
Web site <http://cep.lse.ac.uk>