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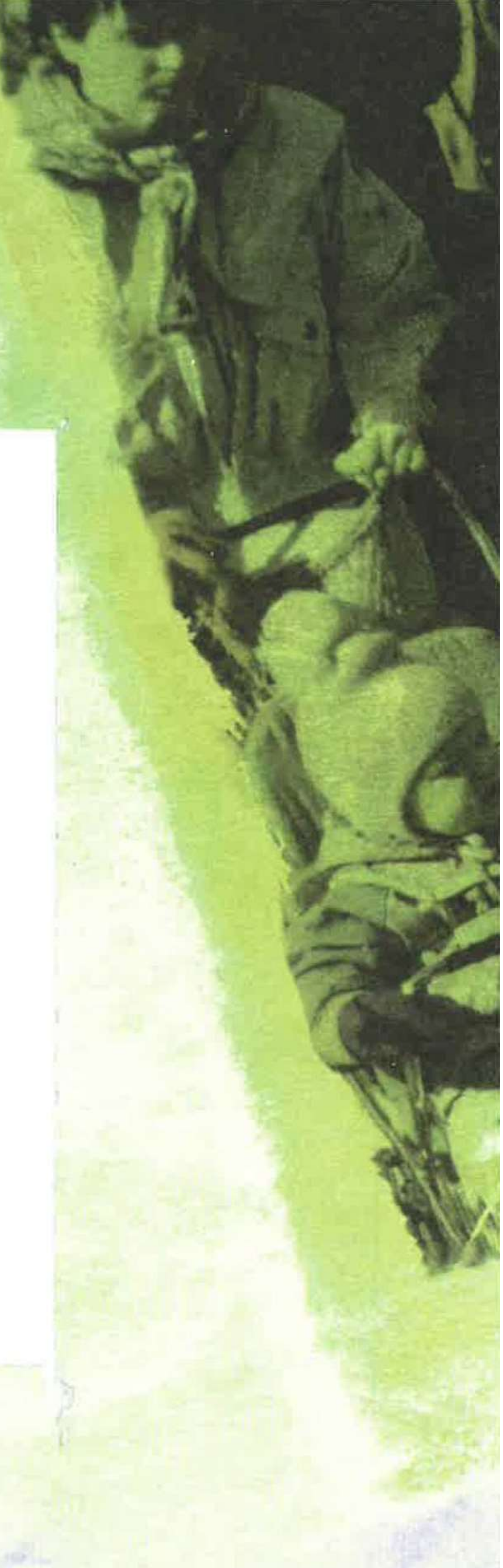

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1. Introduction

There is a solid foundation upon which to argue that the labour market is the most important market of modern economies (see, for example, Elliott 1991). The reason for this arises from the well-known fact that, by a wide margin, most individuals derive their current income flow from selling their labour services. This applies to the Finnish labour markets, which have gained growing interest during the 1990s.[1] The prominent reason for the interest has been the empirical feature that the unemployment rate soared during the so-called great slump of the early 1990s.[2] Since then, according to a number of commentators on public affairs, unemployment has been the most important economic and social problem in Finland. In this respect, the situation is nowadays much the same across the whole of the European labour markets.[3] As a consequence of this development of the 1990s, the issues associated with the Finnish labour markets constitute a topical research theme.

Despite the apparent importance of labour markets, there is rather limited empirical knowledge of a number of particularities that characterize the Finnish labour markets. Oswald (2000) strongly argues that the search for reliable empirical patterns in economic data should constitute the core of economic research. These notions constitute the broad starting points of the following essays.

This collection of empirical investigations consists of five essays. These essays aim to provide evidence on interesting empirical patterns of the Finnish labour markets based on various data sets. The essays fall into three categories. The first two essays investigate the selected aspects of working hours in Finland. These essays investigate the determination of average working time from the long-term perspective and overtime at the individual level in Finnish manufacturing. The following two essays concentrate on the dynamics of regional labour markets in Finland. These essays focus on gross job and worker flows of the Finnish regions and address the connection between unemployment and reorganization from the regional perspective. The last essay in this collection deals with the issue of the perception of job instability among workers in Europe by using survey data. The essay aims to provide a contribution to the ongoing discussion about the fundamental aspects of the European labour markets. The perception of job instability is related to working hours and labour market flows. The perception of job instability (i.e. the fear of nullification of hours of work entirely) constitutes an antithesis to overtime. Moreover, an investigation into the perception of job instability induced by involuntary worker flows completes the picture painted by the studies that focus on gross flows of jobs and workers from a broader perspective.

1.1. The Finnish labour markets during the 1990s

Finland is, without dispute, one of the Nordic welfare states with high labour taxes, extensive social benefits and one of the highest rates of trade union membership and coverage of collective wage agreements in the OECD. Minimum nominal increases in wages and reductions in average working time are, for the most part, determined within the framework of collective bargaining (Layard and Nickell 1999).[4] Finland provides an example, *par excellence,* of a corporatist political and economic system.[5] The Finnish labour market policy is therefore the result of a close and long-term interplay between social partners and the government. About 80% of the salaried labour force in Finland belongs to unions. The high unionisation rate is partly explained by the fact that membership fees are tax deductible and the fees are mainly collected by employers and by the involvement of the unions in the administration of unemployment insurance benefits.[6] The structure of Finnish wage bargaining usually involves a high degree of coordination between unions and employers, with a framework agreement being determined centrally on a one- or two-year basis, followed by union-level bargains.

As a consequence of collective wage agreements, the distribution of wages across individuals tends to be compressed in Finland.[7] This apparent narrowness of certain distributions of economic variables fails to extend to all dimensions of the Finnish labour markets. A certain amount of flexibility is generated into the Finnish wage formation by the so-called wage drift, which has, historically, accounted for approximately 30% of the total increase in earnings.[8] The following discussion focuses on additional aspects that have facilitated adjustment in the labour market and that are relevant for this collection of empirical investigations.

The total hours of work consists of several components. There is a rather large scope for the utililization of overtime hours at the individual level of the Finnish economy despite the fact that the so-called standard hours are stipulated by the binding collective agreements. In particular, overtime hours have traditionally been applied in manufacturing. This is due to the fact that non-manufacturing represents other forms of less stable labour relations such as part-time work and various temporary employment contracts. These instruments can be considered to be substitutes for the implementation of overtime from the perspective of companies. Paid overtime therefore constitutes an important part of the adjustment of the total hours of work in Finnish manufacturing.[9]

The adjustment of the Finnish labour markets carries an interesting regional dimension. The regional disparities of labour markets have been sharp and persistent in Finland. For instance, an empirical investigation by OECD (2000) into the issue reveals that the regional disparities of the unemployment rates in Finland are among the highest in the European Union. In particular, the unemployment rate has been at a higher level in Eastern and Northern Finland compared with Southern Finland during the past few decades.

The following essays examine overtime and regional labour markets in Finland, especially in the turbulent decade of the 1990s. The great depression of the 1930s is usually seen as the most severe peacetime economic crisis of the twentieth century in most industrialized countries. However, Finland suffered its worst recession of the twentieth century not in the 1930s but in the early 1990s. In the years 1991–1993 output fell by 10% and the unemployment rate reached its all-time high (i.e. almost 20% of the Finnish labour force as measured by Statistics Finland). Indeed, these figures were much worse than those recorded during the great depression of the 1930s.[10]

Despite the fact that Finland's experience in the early 1990s was unique in the context of the OECD countries, other Nordic countries and the United Kingdom had certain qualitative similarities in their economic development at the same time. In particular, deregulation of financial markets lead to overlending by banks, which caused an unsustainable boom in consumption, investment spending and asset prices. In Finland, however, the slowdown of the early 1990s was much worse than elsewhere when measured by the aggregate indicators of economic activity. An exogenous factor that partially explains this is the fact that, in addition to the asset market collapse and the deep fall in domestic consumption, there was almost a complete disappearance of the Soviet trade in 1990–1991. The reasons behind the great Finnish depression of the early 1990s have, therefore, been aptly described as "bad luck, bad banking, and bad policies".

Since 1994 there has been a strong export-led recovery of aggregate economic activity in Finland. Despite this recovery, the great slump has shaped most of the economic outcomes during the period of the 1990s that is included in the empirical investigations of the following essays on the Finnish labour markets. The exceptional magnitude of the slump helps to identify interesting empirical patterns that would be hard to detect during normal business cycle fluctuations.

The macroeconomic impulses shaped the labour market outcomes. For instance, there was a notable decline in overtime in manufacturing during the great slump of the early 1990s. Due to the collapse of labour demand, there was a substantial fall in the net rate of employment change across the Finnish regions. Thus, the data that covers this period provides an opportunity to investigate the establishment-level adjustment of regional labour markets during an episode of sharp fluctuations. The evolution of employment was associated with restructuring in terms of job creation and destruction.[11] In addition, there was an increase in the magnitude of the external reorganization of regional labour markets measured by migration flows that started in 1994 (see, for example, Pekkala and Ritsilä 2000). Concerning the impacts on self-reported subjective wellbeing of individuals, there was an increase in the perception of job instability among workers in Finland during the slump, which is a natural consequence of a rapid increase in the unemployment rate.[12] This particular pattern highlights the enormous costs associated with the high unemployment trap in the European labour markets.

1.2. The selected themes of labour markets

1.2.1. Working hours

Working hours have provided interesting puzzles and research questions to economists ever since Adam Smith (see, for example, Contensou and Vranceanu 2000). The determination of working time is usually investigated in terms of standard neoclassical economics. In principle, working time is, in this context, determined according to the supply side of the labour market. The analysis is based on the maximization of utility derived from two homogeneous commodities, which are called consumption and leisure, that eventually determine the optimal level of working time (i.e. the individual level of the labour supply).[13] In turn, this basic elaboration of working hours can be extended to cover more complicated situations that introduce various constraints for the determination of working time induced by the demand for the hours of work by companies.[14] This means that firms' decisions can put constraints on the choices of individuals.

Determination of working hours is a topical issue in the context of the European labour markets (including Finland). An important reason for this is that Europe's high unemployment trap has induced a great number of ambitious plans to solve the dilemma. One of them is known as "work-sharing". The idea of work-sharing is to redistribute the available work to more people and thereby give a stake for the unemployed persons. Work-sharing works when there is a tradeoff between average working time and employment. This means that a reduction in average working hours delivers an increase in employment.[15] The idea has been put into practice in many OECD countries, where the average annual working time has been reduced either by contracts or by legislation. There have therefore been a great number of empirical investigations into the relationship between employment and average annual working time. In a nutshell, the empirical studies on working time and employment tend to discover that the supposed positive impact of a reduction in working time on employment is a small one (see, for example, Hart 1987; Hamermesh 1996; Kapteyn, Kalwij and Zaidi 2000).[16] This means that work-sharing schemes seem not to be the solution to the European unemployment problem.

Despite the enduring interest by the economic research on working time issues there are uncovered and neglected research questions. For instance, there have been certain interesting long-term trends and patterns in the average working time across industrialized countries. Voth (2000) observes that there was an increase in the length of the average annual working time during the early stages of industrialization. The trend was reversed during the late 1800s. This feature means that there has been a continuing decline in the average working time during the 1900s (Maddison 1995). Along with these international trends across industrialized countries, there has been a sharp decline in the average working hours in Finland during the past few decades. For instance, the length of the average working time has declined in Finnish manufacturing by approximately 400 hours during the period from 1960 to 1996. This long-term decline in the average working time needs to be explained by the economic fundamentals in the context of a Nordic welfare state.[17] The issue can be explored by using industry-level data on the average working time and economic fundamentals.

A well-known distinction in the investigation of working time deals with the adjustment margin of labour input from the perspective of companies (see, for example, Hamermesh 1996). The notion is based on the analysis of the standard profit maximization of a firm with respect to labour services, which consist of two components that are employment and working time (see, for example, Contensou and Vranceanu 2000). The extensive margin refers to the sensitivity of profits with respect to employment. On the other hand, the intensive margin refers to the sensitivity of profits with respect to working time. In principle, firms use overtime hours (in other words, the intensive margin of labour utilization in contrast to the extensive margin of labour utilization), because of the presence of the quasi-fixed cost of employment, i.e. hiring and training costs and various employee benefits that are related to employment but not to performed working hours. In contrast, from the perspective of individuals, overtime is one way to induce flexibility to the total hours of work along with dual job holding.[18]

However, the determination of the share of overtime has been one of the uncovered issues in the context of empirical studies on the European labour markets. The issue is highly interesting, owing to the stylized feature that, despite the persistent unemployment in Europe, there are a great number of employees that provide overtime hours at the same time. In other words, an interesting empirical pattern of the European labour markets is that the total hours of work are extremely unequally distributed across individuals and households. Overtime hours contribute to this particular pattern of labour markets. This same discrepancy is evident in Finland, where the unemployment rate has been at a high level despite the recovery from the great slump of the early 1990s. At the same time, there has been a rebound in overtime hours in Finnish manufacturing. In addition, the determination of overtime is closely related to the issue of work-sharing, because a reduction in standard working hours may increase the costs per worker in relation to the cost of overtime. This means that companies may actually substitute overtime for workers. This substitution effect may reduce employment when output is fixed by demand. In response to this, there has been a discussion on the need for binding overtime ceilings. The empirical studies that uncover the determination of overtime hours need to be based on individual-level data.

The first essay on working hours explores the determination of the average working time in the context of a Nordic welfare state, Finland, from the long-term perspective (Essay 1). The motivation of the study arises from the fact that the issue of work-sharing is debated in Europe, but extremely little is known about the economic fundamentals that have contributed to a decline in the average working time during the past few decades. It is especially interesting to investigate the decline of the average working time tied in with rising productivity and increasing labour taxes, which constitute the key elements of the Nordic welfare states. The study aims to provide a coherent picture of these elements of economic progress. The issue is studied by dividing the Finnish economy into six main sectors. The sectoral panel data is based on the yearly observations from 1960 to 1996 and is obtained from National Accounts. The estimation results are based on fixed effects models. The main empirical finding of the study is that both an increase in labour productivity and a widening of the tax wedge have contributed to a decline in the average working time in Finland during the past few decades. In particular, a rise in labour productivity over time means that people become richer and as a consequence they demand more leisure. Reductions in working time are therefore one way of distributing increased prosperity. On the other hand, a widening of the tax wedge over time has meant that for workers it is more attractive to take the fruits of increased productivity as an increase in leisure. These observations are consistent with the predictions of a theoretical model that is based on the notion of equilibrium working hours.

The second essay on working hours deals with the determination of the share of overtime hours at the individual level in Finnish manufacturing (Essay 2). The total hours of work consist of two major components. The so-called standard hours are determined by binding collective agreements in Finland. On the other hand, the overtime hours are determined at the individual level of the economy. This means that the hours of overtime can vary from individual to individual for a variety of reasons. The aim of this study is to characterize the incidence of overtime hours in Finnish manufacturing. The study also sheds light on the incidence of overtime induced by the heterogeneity of establishments. In addition, the study considers the impact of the degree of tightness in regional labour markets on overtime hours.

The study is based on individual-level data from manufacturing that covers the last quarter of the year from 1989 to 1995. The individual-level data is from the records of the Confederation of Finnish Industry and Employers (*Teollisuus ja Työnantajat,* TT). The data contain about 56000 observations. The data is based on the fact that each year TT conducts a survey among its member employers and gathers information on paid wages, salaries and the hours of work of employees. This means that the data contain detailed and accurate division of the total hours of work into various components (including overtime). The share of overtime is, by definition, a variable bounded by (0, 1). Indeed, there are a great number of employees that do not do overtime in Finnish manufacturing. Thus, the estimation results are based on Tobit specifications.

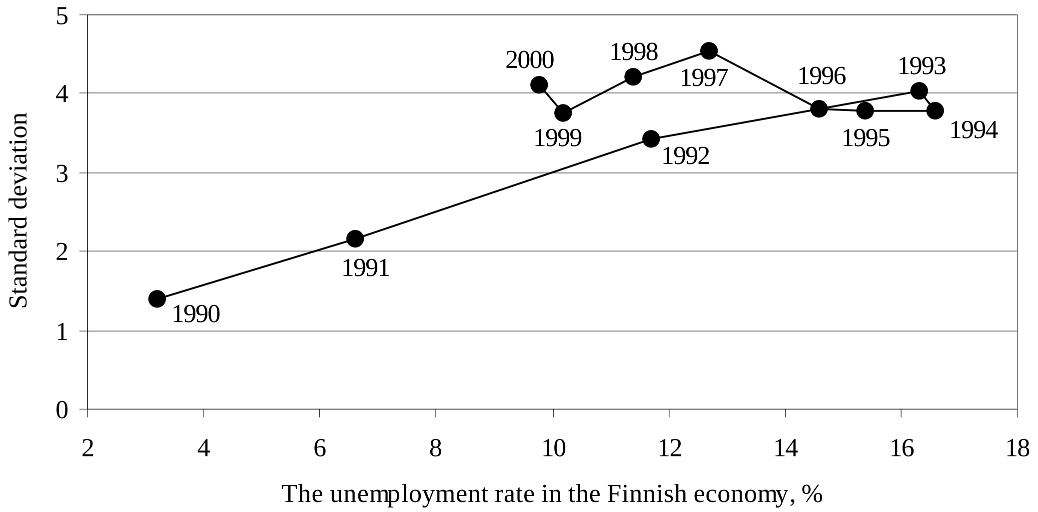
The study is able to uncover a number of interesting empirical patterns concerning the determination of the share of overtime hours in Finnish manufacturing. Overtime covers roughly 3% of the total hours of work and the share of overtime has been strongly procyclical over the period of investigation. The hours of overtime divided by the total number of hours decline as an employee ages. The overtime hours also decline in wage per straight-time hours and in straight-time hours. These results are broadly in line with those obtained from the empirical studies that use UK data of overtime hours at the individual level. In addition, the estimation results show that males and newcomers (i.e. employees that were not in the industry one year previously) tend to work more overtime, but leavers (i.e. employees that leave the industry between this year and the next) work less overtime. The share of women in the establishment has a negative effect on the incidence of overtime hours. The degree of tightness in regional labour markets had no overall impact on overtime from 1991 to 1995. This observation can be rationalized by noting that the Finnish economy experienced an extreme economic slowdown during the early 1990s. There was therefore no shortage of employees. However, the impact of the regional unemployment rate on the incidence of overtime hours differed sharply between the population of the small plants (i.e. plants that have fewer than twenty employees) and the rest of the plants in Finnish manufacturing.

The stylized feature emerges according to which the hours of overtime are more frequent in the population of small establishments. The size effect did not collapse during the great slump of the early 1990s, but the magnitude of this effect has been procyclical from 1989 to 1995. These observations mean that the small plants seem to react differently to variations in product demand, which mostly varies with time. The result that overtime hours are more common among small establishments is not driven by the smallest plants, either. In addition, the overtime equation was estimated separately for the five industries in Finnish manufacturing. These results support the perspective that the more flexible working hours in terms of overtime hours are used within the capital-intensive industries in order to take full advantage of establishments' accumulated capital stock in the volatile environment in which small establishments are positioned.

1.2.2. Regional labour markets

Labour markets have a distinct regional dimension. This feature is especially apparent in Finland. Regional labour markets have gained growing interest in Finland, because there has been an increase in the regional disparities of the unemployment rates as part of the export-led recovery from the great slump of the early 1990s.[19] Thus, the regional unemployment disparities across the twenty Finnish provinces measured by the standard deviation of the unemployment rates were about four times higher in 1997 compared with the situation before the recession (Figure 1). This pattern of regional adjustment has been in conflict with the earlier stylized feature of the Finnish regional labour markets, according to which there tends to be a decline in the absolute regional disparities of the unemployment rates measured by the standard deviation during the times of rapid economic growth. In

Figure 1. The standard deviation of the unemployment rates across the twenty provinces of Finland and the unemployment rate in the Finnish economy during the 1990s (Source: Statistics Finland; Labour Force Survey).



other words, the period of the late 1990s constitutes an important exception to this pattern of regional labour markets.

During the past ten years a growing body of literature within labour economics has emerged that employs longitudinal, linked employer-employee data in analysing the pace of job reallocation and worker flows (see, for example, Abowd and Kramarz 1999; Haltiwanger et al. 1999). In particular, the dynamics of labour market adjustment at the plant level of the economy can be captured by applying the measures of gross job and worker flows (see, for example, Davis and Haltiwanger 1999).[20] Joseph A. Schumpeter (1942) called this process of capitalism “creative destruction”. Indeed, according to the growing number of detailed establishment-level studies, it is fair to say that the reallocation and the reorganization of scarce resources culminates in the turbulence of labour markets, where the reallocation of resources takes the form of gross job flows (i.e. job creation and destruction), and gross worker flows (i.e. hirings and separations of workers).

Gross job and worker flows decompose the net rate of employment change into components. Thus, the net rate of employment change is the job creation rate minus the job destruction rate (or the hiring rate minus the separation rate of workers). The job creation rate is defined as the sum of positive employment changes, divided by the average number of employees. In contrast, the job destruction rate is defined as the absolute value of the sum of negative employment changes, divided by the average number of employees. The sum of job creation and destruction rates is called the job reallocation rate. The excess job reallocation rate equals the job reallocation rate minus the absolute value of the net rate of employment change. This means that excess job reallocation is an index of simultaneous job creation and destruction.

Comparison of information in two consecutive years can be used for calculating the number of employees who have entered a plant during the year and are still working at the same plant. The sum of these employees over all plants is worker inflow, or hiring. In addition, it is possible to identify those employees who are no longer working at a plant. This means that the sum of these employees is worker outflow, or separation. The excess worker turnover rate (i.e. the churning rate) compares gross worker flows with gross job flows; the larger the magnitude of the churning rate the larger the worker flows (hirings and separations of workers) compared with job flows (creation and destruction of jobs).

The earlier empirical studies on regional labour markets have neglected the fact that regional economies are in a state of continuous turbulence (see, for example, Elhorst 2003). There are therefore a great number of uncovered research questions in the investigation of regional labour markets in Finland that are linked to gross job and worker flows. In other words, the earlier empirical studies on the Finnish regional labour markets have been conducted by using aggregate data on (net) employment changes.[21] The main shortcoming of these traditional investigations of the aggregate outcome is that they entirely mask the establishment-level dynamics of labour-demand adjustment and provide an incomplete and potentially misleading picture of the Finnish regional labour markets.

Empirical studies that aim to relate the regional unemployment disparities to the economic fundamentals in Finland have not been available. A panel of the Finnish regions is highly suitable for the investigation of this issue. In particular, the existing studies exclude an evaluation of the impact of reorganization in terms of gross flows of jobs and workers on the regional unemployment rates. This same notion seems to extend to the whole of the empirical literature on regional unemployment disparities despite the fact that starting from Lowry’s (1966) contribution there have been a great number of studies that focus on gross migration flows (see, for example, Elhorst 2003; OECD 2000). Indeed, the measures of gross migration flows complement the picture painted by the measures of gross job and worker flows from the perspective of regional reorganization.

The internal reorganization of the Finnish regional labour markets can therefore be captured by using the measures of gross flows of jobs and workers that are calculated from plant-level micro data. In contrast, the reorganization between regional labour markets can be described by using the measures of gross migration flows.[22] Indeed, the turnover between regional labour markets can be measured in the same way as the rate of excess job reallocation. This means that a measure of external turnover can be based on the notion that the magnitude of simultaneous gross migration flows is an appropriate measure for the intensiveness of reorganization across regional labour markets.

The first essay on regional labour markets deals with the issue of gross job and worker flows in Finland (Essay 3). The motivation of the study is based on the fact that there has been a bulk of research on gross job and worker flows based on cross-country comparisons. In contrast to available cross-country comparisons, the study provides detailed empirical evidence for the perspective that there are differences in gross job and worker flows within the same country despite the presence of the same institutional characteristics (including labour market regulations) across regions. In particular, the study explores the disparities in the regional labour market adjustment during an episode of extreme turbulence in the Finnish economy. In addition, the genuine regional elements in gross job and worker flows are separated from the effects of the industry structure.

Gross job and worker flows are calculated from establishment-level data from 1990 to 1997 and are then aggregated to the Finnish regions. The applied establishment-level data covers more than 80% of the total employment in the non-farming business sector of the Finnish economy. Thus, the data contain 1.1 million employees in about 100 000 plants. The geographical division of Finland is based on NUTS3 regions. The number of these regions is twenty.

The magnitude of gross job and worker flows is large, relative to the net employment change in the Finnish regions. This observation is consistent with stylized features of the literature. There is therefore a great deal of gross job creation in the declining regions with high average unemployment in Eastern and Northern Finland. On the other hand, there is a great amount of gross job destruction in the growing regions with low average unemployment in Southern Finland. In other words, the study provides extensive evidence for the perspective that stresses the enormous heterogeneity of regional labour market adjustment in Finland in contrast to the earlier literature that has been focused solely on (net) employment changes. The entry and exit of establishments covers about 2–3% of all employees each year. This means that the regional disparities in gross job and worker flows in Finland are driven mainly by continuing establishments.

Gross job and worker flows provide an insight into the adjustment of regional labour markets during the great slump of the early 1990s and the following recovery of economic activity. The rapid rise in regional unemployment rate disparities from 1991 to 1993 can be explained by the sharp rise in the regional disparities in job destruction rates and in separation rates of workers. There was a decline in regional disparities in job creation rates and in hiring rates of workers at the same time. The highest level of job destruction at the bottom of the slump was in the provinces of Eastern and Northern Finland. In contrast to the adjustment of labour markets in the slump, during the recovery from 1994 to 1997, there has been a decline in the regional disparities in job destruction rates and in separation rates of workers, but a rise in the regional disparities of job creation rates and hiring rates of workers.

There are genuine regional elements in gross job and worker flows despite the fact that the extreme volatility of economic activity over the period of the investigation means that much of the explained variation in gross job and worker flows can be attributed to years (and also to industries). The role of these genuine regional elements is most important in the case of the churning rate (i.e. the excess worker turnover rate). In particular, the patterns of gross job and worker flows that are characterized in this study cannot be explained by the industry structure of the Finnish regions. In contrast, the regional differences in net employment growth rates in the period from 1990 to 1997 can be reduced mainly to the differences in the industry structures of the regions. This pattern highlights the fact that the focus on gross flows of job and workers can indeed provide important insights into the adjustment of the Finnish regional labour markets.

The second essay on regional labour markets aims to relate the regional unemployment disparities to the economic fundamentals in Finland (Essay 4). Along with the conventional economic fundamentals suggested by the available empirical literature on regional unemployment disparities, the study considers the measures of gross job and worker flows based on the establishment-level dynamics of labour-demand adjustment in the Finnish regional labour markets. In addition, the study includes an elaboration of the impact of gross migration flows on the regional unemployment rates. By doing this, the study fills an important gap in the literature on regional labour markets in Finland and provides empirical evidence for the importance of the reorganization of regional labour markets based on gross flows of jobs and workers. The evaluation of regional labour markets is based on regional panel data that is created by matching the conventional economic fundamentals with the measures based on gross flows of jobs and workers. The data covers the period from 1989 to 1996. The geographical division of Finland is based on NUTS4 regions. The number of these regions is 85. The estimation results are based on various panel data models. In particular, a dynamic model is considered, because adjustment of the key variables of interest is not necessarily immediate.

The Kernel density estimates for the distribution of the unemployment rate across the Finnish regions for the year 1991 (i.e. the bottom of the slump measured by the net rate of employment change) and the year 1996 reveal that there have not been substantial changes in the shape of the distributions of the unemployment rates despite the fact that there has been a sharp increase in the average unemployment rate with a rise in the dispersion of the unemployment rates at the same time. In particular, there is no empirical evidence for the bipolarization of the distribution of the regional unemployment rates during the 1990s. The striking empirical finding from the panel data estimations is that the reorganization of labour markets lowers the unemployment rate in the Finnish regions. In other words, the reallocation of labour resources seems to be good for regional employment. The essential role of reorganization in the determination of regional unemployment has some direct relevance for regional policy. In particular, this finding provides empirical support for the perspective that various public measures should not be aimed at aiding contracting plants since restructuring at the establishment level of the economy will eventually yield a lower unemployment rate.

1.2.3. Perception of job instability

There was an important and well-known switch from the framework of measurable cardinal utility to a theory based on a preference index of ordinal utility in microeconomics during the 1930s (see Frey and Stutzer 2002a; 2002b). Since then the mainstream perspective of economics has been that utility cannot be measured and there is usually no sense in the evaluation of various measures of self-reported subjective wellbeing by individuals. This switch has also had a deep impact on labour economics.

There is a long and equally well-established tradition of analysis that applies various subjective survey responses within the professions of psychology and sociology. Moreover, within the field of standard labour economics, it has always been common to apply labour force surveys that can be utilized, for instance, in the empirical studies of gross worker flows. However, along with the mainstream tradition of economics, labour economists have not focused on the investigation of the measures of self-reported subjective wellbeing by individuals.[23] The neglect of the measures of the subjective wellbeing of individuals is at least partly related to the fact that economists are usually sceptical about the use of this kind of individual-level survey data owing to non-random measurement errors. For instance, Berthard and Mullainathan (2001) provide selected empirical evidence on the issue that the measument error of often applied surveys tends to correlate with a large number of individuals' characteristics such as education.

However, this traditional pattern of the literature changed rapidly during the 1990s.[24] There have therefore been an increasing number of empirical studies by economists based on the self-reported measures of subjective wellbeing by individuals. These studies aim to explain, for instance, various measures of happiness and job satisfaction (see Clark and Oswald 2002; Frey and Stutzer 2002a; 2002b). In particular, within the context of labour economics, one of the most important empirical findings has been that unemployed persons report substantially lower levels of happiness than employed persons (see, for example, Oswald 1997). Indeed, this piece of empirical evidence is highly important from the economic policy perspective due to the fact that the observation underlines the notion that unemployment is involuntary by its nature for most of the unemployed.

The perception of job instability constitutes an important subjective measure of wellbeing by individuals owing to the fact that for the large majority of employees only one match with an employer comprises most of the current earnings, making their welfare closely related to the potential risk of losing their job in the presence of incomplete insurance against shocks. In other words, the very nature of the labour markets itself gives rise to a perception of job instability among employees. This problem is apparent in the context of the persistent European unemployment problem.

The perception of job instability is not disconnected from the issues of working hours and labour market flows. In particular, the perception of job instability is related to the unequal distribution of working hours across individuals and households in Europe that is highlighted in the pattern of overtime. Indeed, the perception of job instability (i.e. the fear of nullification of hours of work entirely) constitutes an antithesis to overtime. Moreover, an investigation into the perception of job instability completes the picture painted by the studies that focus on gross flows of jobs and workers covering European countries. The recent studies that underline the enormous magnitude of gross flows of jobs and workers usually fail to differentiate between voluntary and involuntary flows. An investigation that focuses on the perception of job instability among workers is able to focus more deeply on the determination of involuntary flows of workers that are directly related to the European unemployment problem.

There have been a great number of empirical studies on job instability that aim to document and investigate the realized patterns of job instability by individuals. Those studies, for instance, focus on the tenure structure over the past few decades (see, for example, OECD 1997). In contrast, there are a rather limited number of empirical studies that aim to investigate the empirical determination of perceived job instability from individual to individual. The latter empirical studies require survey data. In particular, there have not been empirical investigations that aim to evaluate the economic fundamentals of the perception of job instability in the European labour markets. The focus of the available empirical literature on perceived job instability has been heavily on the unregulated Anglo-Saxon labour markets. Thus, there is an urgent need to understand the pattern of the perception of job instability in the context of the European labour markets that have been characterized by the persistent unemployment problem.

The last essay in this collection investigates the perception of job instability among workers in Europe (Essay 5). In particular, the aim of this study is to investigate the empirical determination of the subjective probability of the job instability of individuals by using unique survey data from all the 15 member states of the European Union and Norway. The survey was conducted in 1998 and it contains 5435 individuals. The question about the perception of job instability is formulated in the survey as follows: ”Do you worry about the security of your present work?”. The answers to the question can be either ”yes” or ”no”. Thus, the estimation results are based on Probit models. The study provides detailed empirical evidence, for example, on the individual characteristics such as age and education that are related to the perceived job instability of individuals in European labour markets. In addition, the study includes a consideration of job and firm characteristics and their role in the determination of the perception of job instability. Thus, the survey data enables us to evaluate the whole spectrum of economic fundamentals that give rise to a perception of job instability. There tends to be a rather vague relationship between institutional features and the perception of job instability among workers. However, the patterns of perceived job instability and the institutional features of European countries are not consistent with the popular notion that the perception of job instability declines as the strictness of labour standards and the strictness of employment protection increase. This pattern emerges despite the stylized feature of the earlier literature that the magnitude of gross job and worker flows of the economies declines as the strictness of labour standards and employment protection increases. This means that the perception of job instability and the underlying gross flows of job and workers need not be closely correlated.

The estimation results reveal that perceived job instability increases with age. In other words, there is evidence for the perspective that it is the job loss wage penalty more than the job loss incidence that drives the perception of job instability among European workers. The conclusion on the role of job loss incidence is based on the fact that the turnover of workers is higher among young workers. An increase in the educational level, on the other hand, leads to a decline in the perception of job instability. There are no differences in the perceptions of job instability between males and females. An occurrence of unemployment during the past five years delivers a substantial rise in the perception of job instability. The empirical finding that the unemployment history strongly matters is consistent with the notion that an unemployment episode provides private information about the unobservable productivity of an employee. The most striking result is that a temporary contract as such does not yield an additional increase in the perception of job instability at the individual level of the economy. However, the perception of job instability is more common in manufacturing and there is some evidence for the perspective that it increases according to the size of the firm. There are also strong country effects. For instance, the perception of job instability among workers is lower in Denmark and higher in Spain than in Norway even after taking into account the controls included for the incidence of job instability at the individual level of the economy in European labour markets.

1.3. Summary of findings

• An increase in labour productivity and a widening of the tax wedge have contributed to a decline in the average working time in Finland from the long-run perspective. These observations are consistent with the predictions of a theoretical model that is based on the notion of equilibrium working hours.

• Overtime hours have an interesting role in the adjustment of total hours of work in Finnish manufacturing. The stylized feature emerges according to which overtime hours are more frequent in the population of small establishments.

• Gross job and worker flows reveal the enormous heterogeneity in the plant-level adjustment of labour demand in the Finnish regional labour markets in contrast to the earlier empirical literature that has focused on the elaboration of the net rate of employment change.

• The internal and external reorganization of labour markets lowers the unemployment rate in the Finnish regions. This means that the reallocation of labour resources at the plant-level of the regions seems to be good for regional employment in contrast to the earlier empirical literature that has stressed the notion according to which restructuring is an important source of the regional unemployment problem.

• The unemployment history of workers strongly matters for the perception of job instability in European labour markets. This pattern highlights the substantial costs associated with the high unemployment trap.

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[1] The collections of empirical studies on the Finnish labour markets include Pohjola (1998) and Ilmakunnas (2001).

[2] Kiander and Vartia (1996), Honkapohja and Koskela (1999), and Kiander (2001) provide descriptions of the great slump of the early 1990s.

[3] Bean (1994) provides a survey of the European unemployment problem. Ilmakunnas and Koskela (2002) contains a collection of articles on the European unemployment problem. Koskela and Uusitalo (2003) provides a discussion of the Finnish unemployment problem in the European context.

[4] Santamäki and Parviainen (1996), Vartiainen (1998), and Marjanen (2002) provide descriptions of the Finnish labour markets.

[5] Vartiainen (1998) provides a description.

[6] Pehkonen and Tanninen (1997) studies this issue.

[7] Uusitalo (2002) provides evidence for the perspective that the distribution of wages has been more compressed during the times of collective agreements in Finland.

[8] Marjanen (2002) documents the evolution of wage drift in Finland during the past few decades.

[9] In addition, non-manual workers provide a great number of unpaid overtime hours.

[10] Böckerman and Kiander (2002a) provide a comparision of adjustment of the Finnish labour markets during the great depressions of the twentieth century.

[11] Maliranta (2001; 2002; 2003) reports that job destruction in low productivity and job creation in high productivity plants has positively contributed to the aggregate productivity growth rate of Finnish manufacturing. Böckerman and Maliranta (2003) focus on the regional dimension of productivity growth in Finland.

[12] Nätti *et al.* (2001) provide an empirical investigation on the perception of job instability in Finland during the 1990s.

[13] Blundell and McCurdy (1999) summarizes the literature.

[14] Ilmakunnas (1997) provides an empirical study on this issue in the Finnish context.

[15] Economists have usually had a sceptical perspective concerning the positive impacts of work-sharing schemes on employment. Hicks (1963) is among the few economists who have been a modest supporter of work-sharing schemes.

[16] The Finnish studies on work-sharing include Holm and Kiander (1993), Ilmakunnas (1995), and Böckerman and Kiander (2002b).

[17] Prescott (2002) argues that the large difference in labour suppy between France and the United States can be explained due to differences in the tax systems of those countries. The argument is based on the distortion induced by the intertemporal tax wedge that is more severe in France. Hetemäki (2002) provides empirical evidence for the perspective that an increase in the tax wedge yields a decline in average working hours in the OECD countries.

[18] Lilja (1991) provides a study on dual job holding in Finland.

[19] Pehkonen and Tervo (1998), and Tervo (1998) provide studies on the regional disparities of the Finnish labour markets. Böckerman (2000) provides a summary of the literature. The Prime Minister's Office (2000) provides a summary of the development of the regional disparities during the 1990s.

[20] Ilmakunnas and Maliranta (2003) summarizes the Finnish evidence on gross flows of jobs and workers.

[21] For instance, Kangasharju and Pehkonen (2001) provide an analysis of growth and employment in the Finnish regions.

[22] The Finnish studies on migration have not focused on gross flows of migration (see, for example, Pekkala and Ritsilä 2000).

[23] Van Praag, Frijters and Ferrer-i-Carbonell (2001) provides a survey of the field.

[24] Frey and Stutzer (2002a; 2002b) provide a summary of the literature.