



Eurofound

Organisation of working time: Implications for productivity and working conditions

Overview Report

[Click for contents](#)

The five case studies on which this report is based are available on demand from Eurofound. Please contact the research managers for further details.

Authors: Anneke Goudswaard, Steven Dhondt, Robert Vergeer and Peter Oeij: TNO, the Netherlands

Jan de Leede and Koos van Adrichem, Modern Workx, the Netherlands

Péter Csizmadia, Csaba Makó, Miklós Illésy: Research Group for Learning Economy and Innovation, Gödöllő: Szent István University, Faculty of Economics and Social Sciences, Hungary

Ákos Tóth, Research Group for Learning Economy and Innovation, Gödöllő, and Kecskemét College, Hungary

Project managers: Christine Aumayr, Oscar Vargas, Manuel Ortigao, Carlos Vacas, Maurizio Curtarelli

Research project: Organisation of working time: implications for productivity and working conditions

Contents

Executive summary	1
Introduction	3
Research questions and methodology	5
Working time flexibility	13
Working time flexibility and productivity	29
Working time flexibility and working conditions	39
Drivers for working time flexibility and factors that have a positive effect on both productivity and working conditions	47
Summary and conclusions	53
Bibliography	61
Annex	65

Executive summary

Introduction

‘Working time patterns have evolved during the last twenty years as a result of the combined influence of technological changes, globalisation, business restructuring and work organisation, increased importance of services, increased diversity of the workforce and more individualised lifestyles and attitudes towards careers’ (European Commission (2010), *Reviewing the working time directive*). As a consequence, European workers have experienced an increasing diversity in working time patterns.

Working time flexibility is one of the many different forms of flexibility. A key characteristic of working time flexibility is the ability to modify working hours by either the employer or the employee or both. Working time flexibility can be seen from the perspective of the employer or the perspective of the employee. ‘Employer-friendly’ forms of working time flexibility are those that allow organisations to bring human capital in line with the temporal requirements following from business, while ‘employee-friendly’ forms of working time flexibility are those ‘that provide workers with the freedom to adapt their working hours and schedule to meet their own personal and family needs’. The Europe 2020 initiative recognised that organisation of working time can help workers combine work and other commitments, and employers adjust labour input. However, in some cases increasing flexibility can also have negative effects on work–life balance and other working conditions aspects like health.

The main aim of this research is to explore and show whether and under what conditions working time flexible arrangements in companies are implemented and can increase productivity and at the same time preserve or improve quality of work in general and especially with regard to work–life balance.

The report examines working time flexible arrangements implemented in five companies of the retail and automotive sector in Hungary and Belgium and the Netherlands using the case study methodology. The company cases have been supported with expert meetings, literature review and the analysis of the European Working Conditions Survey (EWCS) and European Company Survey (ECS).

Key findings

There are significant differences in the use of working time flexible arrangements by companies and workers in the countries. In the Netherlands, this type of organisation of work is most common, followed by Belgium and Hungary has a lower incidence of companies analysed. As a consequence, higher percentages of workers in Netherlands and Belgium report variability in their time schedule than workers do in Hungary. However, more workers have autonomy in adapting working hours in the Netherlands than in Hungary. National differences in economic structure and labour legislation contribute to this.

Sectoral differences are found in the types of working time arrangements and the degree to which workers can influence their working time. In retail companies, with higher levels of female workers and more individualised rosters, employees have influence on their daily rosters and use it to align work and family life. In the automotive companies with more collective rosters, employees cannot formulate many wishes with regard to the variability of their working hours, but they can influence the days they take off.

The cases showed that most of the times the initiative for implementing flexible working time arrangements came from the company management. This is in particular the case for different working time accounts, for the variable working hours and shift systems and for work outside hours, but also for the compressed working weeks. Flexitime, understood as workers’ complete autonomy to organise their working time within certain limits has not been implemented in the companies studied as a core working time policy. However, in the five companies, there are examples where the employees can adapt their working hours to certain extent; such is the case of regular part-time work, tailor-made

relationships and through tools such as the ‘wish books’. This is partly due to the influence of employee representatives at company or group level collective bargaining.

The mentioned working-time arrangements are positively linked to increasing productivity through a better alignment between the numbers of hours worked and demand for labour. However, the exact level of impact is difficult to estimate and probably not very high in comparison with other measures. In this regard, other flexibility measures as well as the quality of management competences (e.g. dialogue and planning skills) can facilitate the relationship between working time flexibility and productivity.

The study also shows that it is difficult to generalise about the relationship between working time flexibility and working conditions improvements. There are working time arrangements (or elements of such arrangements) with a positive impact, but also others with a negative relationship. Some of the intrinsic aspects of the organisation of working time flexibility like the negotiations of the bandwidth flexibility of a time banking system, a maximum deficit of hours, avoiding extension of hours during certain periods during the day, the level of transparency, ways of increasing predictability of working hours, possibilities of asking days off in the week, tailor-made relations and informal practices, produce positive effects on the work–life balance of employees (even in a context of employer-driven flexibility).

From the case studies it became clear that health related outcomes were not primarily considered when flexible working time arrangements were negotiated. Nevertheless, there is some indication suggesting that there has been a reduction of absenteeism and that better work–life balance and general job satisfaction can lead to better health. Other findings are clear about the improvement of other aspects of working conditions, such as higher job security through the implementation of flexible banking time accounts.

On the other hand, together with positive effects on working conditions, some ‘side’ effects on psychosocial health were suggested. In this regard, good health and safety management can play a role to communicate and prevent the risks.

The study also found triangular relationships between working time flexibility, improvement in work–life balance, increased motivation and psychosocial conditions leading to better productivity. Some of the common factors that can lead to both improvement of productivity and working conditions are the following: social dialogue, planning, transparency, management and leadership and coherence with other aspects of work organisation.

Policy pointers

- Workers and companies alike can benefit from innovative forms of organisation of working time if proper negotiations and social dialogue take place during the planning and implementation phase.
- Contextual and national factors like legislation, child care, needs of specific groups and characteristics of the economic sectors should be taken into account.
- Initiatives should be aimed at all groups of workers regardless of their contractual arrangements or other particular characteristics like age, gender or occupational level.
- When legislation and agreements are developed to allow or encourage flexible organisation for working time, their impact on working conditions should be considered.
- In this study the focus has been on employer-oriented working time arrangements implemented in an employee-friendly way. Further research on employee-oriented working time flexibility (such as flexitime) is recommended to gain a comprehensive view of the potentiality of working time flexibility for the improvement of productivity and working conditions.

Introduction

The main aim of this study is to explore the relationship between working time flexibility and productivity and working conditions. This case study research is supported by other sources, such as a literature review, expert meetings and analysis of the European Company Survey (ECS) and the European Working Conditions Survey (EWCS). The results of the case study research comprise the core of this report. Where relevant, the results of the literature review, the expert meetings and the secondary analysis will be used to provide a broader overview.

This report presents the results of case studies of five companies. The case studies were carried out to uncover the mechanisms behind flexible working time arrangements and consequences for productivity and working conditions.

Flexible working time arrangements differ per sector. The relationship between productivity and working conditions depends on the context. For these reasons, the case studies focus on a limited number of sectors and countries. The case study research was carried out in two retail companies in the Netherlands and Belgium and in three companies in the automotive sector in the Netherlands and Hungary. For convenience, this report uses the term ‘case company’ to refer to the companies included in this case study research.

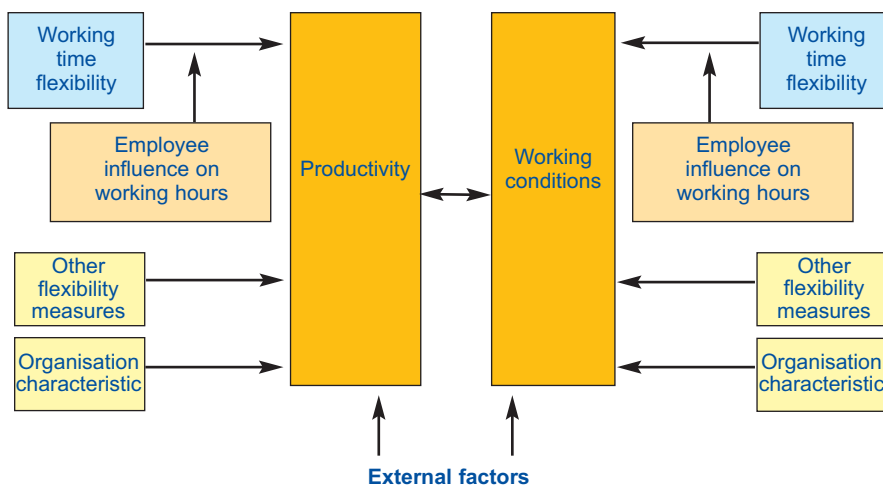
Research questions and methodology

This case study research aimed to answer the following research question:

How have certain companies been able to implement flexible working time arrangements in a way that they have positive effects for productivity and at the same time improve working conditions, in particular health and work–life balance?

Figure 1 shows the research model.

Figure 1: *General research model*



Key concepts

Working time flexibility

For the purposes of this study, working time flexibility refers to the ability of the employer and/or employee to modify the regular working time pattern, rather than the mere existence of atypical forms of employment contracts. Although this project does not overlook arrangements like part-time work or regular shift work, the focus is on flexible forms of working hours, such as short-term and long-term working time accounts, variable working hours, flexitime, staggered working hours, irregular shifts as well as tailor-made solutions.

This report's definition of working time flexibility concerns the variability of working hours. In the literature, variability is usually associated with flexible working time arrangements controlled by the employer. In this report, it can also be the result of both employer and employee demands. Part-time work does not fall within this definition, unless the hours are performed in a flexible manner. Neither do working time accounts over the lifetime. Annex 1 provides more precise definitions for the different forms of working time flexibility.

Employer and employee influence over working hours

A key characteristic of working time flexibility is the ability to modify working hours. The literature review and the expert meetings both showed that employee influence over working hours might be an important mediator between working time flexibility and health and work–life balance or between working time flexibility and productivity. This is why this study explores employee influence on working hours, both collectively and individually.

Productivity

In this study, productivity is defined as labour productivity. A general definition of labour productivity is ‘output generated divided by the number of hours worked’. This will be the starting point for our study. However, a better organisation of working time might also have an impact on the average labour costs per hour, for example when new working time arrangements include new rules on financial inconvenience benefits. For this reason, this study also discusses the labour costs, when these have changed due to the changed working time arrangement.

The definition of ‘generated output’ will vary between companies, as the products, goods or services vary. In addition, different companies will have different definitions and priorities with regard to their performance indicators. Both qualitative and quantitative output measures are used here. Analysis includes output in production/sales (machines made or pieces sold), as well as the quality of products/services, employee or customer satisfaction and absenteeism or turnover costs over time.

Working conditions

The term working conditions refers to the working environment and aspects of an employee’s terms and conditions of employment. This covers such matters as: the organisation of work and work activities; training, skills and employability; health, safety and wellbeing; and work–life balance. Pay is also an important aspect of working conditions. This study focuses mainly on work–life balance and health. Other relevant outcomes are also included, such as career and employment security.

Internal and external factors

The relationship between working time flexibility and productivity or between working time flexibility and health and work–life balance is influenced by different company specific characteristics (such as the company strategy regarding productivity, health or work–life balance, the demands for flexibility or the labour relations within the company). It is also affected by other available flexibility measures, such as functional flexibility or flexible labour contracts. Relevant external factors include the economy, the local labour market or country and sector specific rules and regulations.

Methodology for the case study research

Selection of cases

The case study research focused on the retail and automotive sectors, where strong competition and effects of the economic crisis are likely to be found. Therefore, the need for an adequate flexibility strategy is clearly important, while the need to balance this with workers’ interests is less evident. Lessons derived from these case studies can make an important input in the European debate on working time. For this reason, we have focused on shop floor employees in the retail stores and on employees in the production department of automotive companies.

The case companies for this research are based in three countries: the Netherlands, Belgium and Hungary. Leading companies in the two sectors are present in these countries. Hungary has interesting automotive industries. The Netherlands has important major suppliers to the automotive industry. The Netherlands and Belgium have leading retail companies in Europe. In terms of working time flexibility, the Netherlands is characterised by intermediate to high flexibility and worker-oriented working time arrangements (Chung et al, 2007). This country is also characterised by below average annual working hours and a high level of part-time work (Eurofound 2009; see also Table 1).

Belgium is characterised by low to intermediate and company-oriented flexibility (Chung et al, 2007), an average amount of annual working hours and a medium level of part-time work (Eurofound, 2009).

Hungary, unlike the Netherlands, has one of the longest levels of average working hours and a low level of part-time work (Eurofound, 2009). As in other southern and eastern European countries, Hungary is characterised by low flexibility and company-oriented working time arrangements (Chung et al, 2007). The manufacturing and retail sectors are also quite large in comparison to other eastern European countries.

Table 1: *Some working time characteristics in Hungary, Belgium and the Netherlands*

	Hungary	Belgium	The Netherlands
Statutory maximum working week in 2009*	48 hours	38 hours (average working week)	48 hours (average maximum working week, including overtime)
Statutory maximum working day in 2009*	12 hours	8 hours (normal working day)	12 hours (including overtime)
Collectively agreed normal working week for full-time contract in 2009*	40 hours	37.6 hours	37.5 hours
Rate of part-time work in 2006**	2.6% for men 5.6% for women	7.4% for men 41.1% for women	23% for men 74.7% for women

*Source: Eurofound, 2010

**Source: Eurofound, 2009

Case studies were conducted of: V&D, a retail company in the Netherlands; Colruyt, a retail company in Belgium; Nido, an automotive company in the Netherlands; and CabTec and Audi, two automotive companies in Hungary. These companies were selected because they implemented (or changed) flexible working time arrangements and because both management and employee representatives agreed they were aiming for a win-win situation with regard to working time flexibility. These selection criteria were checked with both management and employee representatives before the start of the study.

It was very difficult to find companies that met these criteria and were willing to cooperate. Some did not use flexible working hours – this was the case for many small suppliers to the automotive industry in the Netherlands. Some did not feel that a balance had been achieved between the company and its workers; this was the case in many companies in both sectors in the Netherlands and in Hungary. Other companies did not want to take part in the research, due to the time involved or recent takeovers or reorganisations; this was the case in some end-producers in the automotive industry in the Netherlands, Belgium and Hungary. Others felt the topic of the study was too sensitive; this was the case in some Dutch retail companies, where they were in the middle of a process of change with regard to working time flexibility.

We are grateful to the five companies that took part and for the time and effort they put into answering our questions. These companies were willing to cooperate and open up to the researchers because they wanted to learn from the feedback provided by the research. This openness towards dialogue, the willingness to learn and to continuously improve existing practices can be seen as one of the core characteristics of companies that aim for balanced flexibility.

Research method

Research methods included face-to-face and group interviews with company management, local management, employee representatives (unions or works councils), and a focus group with employees. Relevant documents were studied, where available, such as rosters, financial figures, annual reports and results of employee surveys.

A case study approach enables a good insight into the complexity of working relationships and the mechanisms of the working time flexibility arrangements in practice. It also allows lessons to be drawn for other companies or social partners.

Some limitations apply to this study. Companies were not studied for a long period of time. Access to data was restricted, and in some cases limited due to confidentiality reasons. Specific outcomes appear difficult to quantify, which limits the extent to which findings might be generalised. Nonetheless, these case studies provide many interesting answers to the research question.

Introduction to the case companies

The case studies include two retail companies, one in Belgium and one in The Netherlands.

Text box 1: Colruyt

The Colruyt supermarkets comprise the largest retail category in the Colruyt Group, with 222 supermarkets in Belgium in 2011. The Colruyt Group employs more than 20,000 staff members in Belgium, France and Luxembourg. The company started out in 1928 as a small family business. It opts for sustainable growth, and has maximum respect for both man and the environment. Colruyt sells a vast range of food products. For the best possible storage and to save energy, dairy products, fruit, vegetables and cold sliced meat are displayed in the large, cold fresh food section. The frozen products (meat, fish, vegetables, prepared dishes and ice-cream) are stored in closed freezers. Many Colruyt stores have a butcher's shop, with fresh meat served at the counter or in a self-service area. Most stores also sell non-food articles such as toys, kitchen utensils, stationery, make-up and underwear.

To guarantee the lowest prices, the stores are kept as plain as possible and work methods are developed with the aim of maximum efficiency. The check-out system is completely different from that in other stores. The check-out operators stand and transfer the products from one trolley to another.

This case study focuses on one of the Colruyt supermarkets in the region of Flanders. This supermarket has 39 employees, of whom 11 are part-time; all have a permanent contract. The proportion of female workers has grown over recent years (to 38%), but is still below the sector average of 67%. The unemployment rate in the region is relatively high, at more than 10%.

This case study looks at the expansion of the store's opening hours and the implementation of the new collective agreement, including an adaptation of the existing time banking system. The collective agreement was negotiated at corporate level with three national unions (LBC, BBTK and ACLVB). Negotiations started in 2008 and ended in 2011. Rules on working time partly follow the general sector agreement, but in most aspects go beyond this, for instance by providing higher benefits.

Text box 2: V&D

V&D is the largest department store chain in the Netherlands, with 62 stores and over 10,000 employees. The company started as a family company in 1883. Since 2010, V&D has been part of Sun European Partners, the European advisor of Sun Capital Partners Inc., an American investment company.

V&D sells a large range of non-food products including fashion items, multimedia, electronics, books and home furnishing products. The prices of the products are in the middle category. The company strategy combines 'friendly prices and excellent service', aiming at a pleasant atmosphere in the stores and a broad range of products. The V&D market share in fashion has grown consecutively over the past five years. Approximately 75% of its employees are female.

This case study is of a V&D store in the medium sized city of Hilversum, in the middle of the Netherlands. There, most employment occurs in the retail services, care services and in retail. The unemployment rate in 2011 was 5.7%. The V&D store is located in the city centre and has four floors, all of which have a floor manager. Each floor has its own sales units. The store has approximately 70 employees, of whom just over 50% have a permanent contract. Among all employees with a permanent contract, more than half have a contract of 32 hours or less.

Focus was placed on the time banking system that was negotiated at corporate level with two of the largest Dutch unions (CNV Dienstenbond and FNV Bondgenoten). The time banking system existed for over ten years prior to this negotiation process; however, its rules were changed.

Three of the case studies were of automotive companies, one based in the Netherlands and two in Hungary.

Text box 3: Nido/Aebi Schmidt Nederland

Aebi Schmidt Nederland is part of the Aebi Schmidt Group located in Zürich, Switzerland. Aebi Schmidt Nederland operates as an independent company. Customers and staff generally refer to the company as Nido, the name being derived from the former name of the company, Nido Universal Machines BV.

Nido produces and sells (salt) spreading machines for winter road maintenance. Nido mainly produces for the Dutch market and is the market leader in the area of winter road maintenance. The main customers are municipalities, provinces and central government. Production is affected by the highly cyclical demand for salt spreaders.

The company consists of a production and development department and a sales and services department, with a total of over 200 employees. The production and development department is divided into an assembly section, a welding section and a coating section. The case study focuses on the assembly section. In the production department, only three employees are female (one chef and two production workers). Few workers have a part-time contract.

The company is located at an industrial zone in a small municipality in the eastern part of the country. The economic activity in the area is mainly agricultural and related to tourism. There are several other large (agriculture and transport related) companies in the area. These companies provide sufficient employment for the younger generations of farmers. The local unemployment rate in the beginning of 2011 was 3.3% and below the regional average of 7.6%.

The company is subject to Dutch law and the collective labour agreement of the metal industry. There are no unions present at the company, but the works council operates as official employee representation. According to Dutch legislation on works councils, the company needs the approval of the works council before it can introduce or change the working time arrangement for a group of workers or department.

The focus of this study is on the time banking system, which the management of Nido negotiated with the works council. The time banking system existed prior to this consultation process, but its rules were adapted due to the demand from the Aebi Schmidt Group for these rules to be harmonised across the group.

Text box 4: CabTec

CabTec is a company of Swiss origin established in 1973. The company has two plants in Hungary. The Kecskemét plant began production in 1996. The headquarters of the Hungarian plants is situated in Kecskemét, where the research was carried out. Kecskemét is 85 kilometres from Budapest, in the middle of Hungary on the Great Hungarian Plain. This region is traditionally an agricultural area. However, since 1989, more and more industrial investments have been made there, especially from the automotive industry. The plant in Kecskemét has a 5,600 m² production hall on a 10,000 m² area.

CabTec produces more than 10,000 products, including many goods (e.g. conductors, cables and interlocking devices) for the automotive industry companies such as Porsche, Dürr, Bosch, Lear, Phoenix Mecano and Magna. A big proportion of these products are produced in Kecskemét, so this plant was badly affected by the economic and financial downturn in 2008 and 2009. At that time the unemployment rate in Hungary was over 10%.

The main departments in the production lines are the crimping and cutting units, the moulding department and the assembly lines. In 2011, there were 338 workers at the Hungarian plants, an increase from its 310 employees in 2009. Of its 338 employees, approximately 83% are female and 10% are women with young children.

There is no trade union represented at the company. The employees are represented by the works council, which has seven members. According to the Hungarian Labour Law, every six months employers must inform the company works council about the financial status of the company and salaries. They must also provide a report on working conditions and working time arrangements, and the number and tasks of the sub-contracting companies. No company-level agreement exists at CabTec. Individual personal contracts exist between management and employees.

This case study focuses on the following flexible working time arrangements: an average working week system over a two month working period for blue-collar workers (a type of time banking system that employees can influence), flexible working times for white-collar workers, additional days off for workers with disabilities and a special shift for women with young children for both blue- and white-collar workers.

Text box 5: Audi Hungaria Motor Kft. (Audi)

Audi Hungaria Motor Kft. (henceforth referred to as Audi) was established in 1993 in Győr, where the research was carried out. Győr is the biggest city of the north-western region of Hungary, close to the Austrian border. Its main products are engines, engine parts and the car Audi TT coupé.

Between 2008 and 2009, a total of 25,000 jobs were lost in the automotive sector in Hungary. This amounts to one third of total employment in the sector in 2008 in Hungary.

When Audi was established, its main task was the assembly of the engines of Audi TT coupé. All the parts of the engines and cars were imported from the mother company in Germany and from other suppliers. The local engine production started at the factory in 2000. Since then this plant is said to be one of the most developed and modern ones in the Volkswagen concern. In 2001, an Engine Research and Development Centre was set up at the company. Between 1993 and 2011 the company produced more than 20 million engines. Despite the effects of the 2008 crisis, it will double the surface space of the production halls in 2012 and 2013. A proposed 125,000 new cars will be made.

There is a trade union called Audi Hungária Independent Trade Union at the company, which is not a member of the major trade union association. There are seven representatives in the governing body of this trade union. This trade union represents the rights of the employees and played a leading role in developing the collective agreement with the company. Employees can apply to the trade union for financial support when necessary.

This case study focuses on the role of flexible working hours in the company's response to the crisis in 2008. Audi chose to protect all its well-trained workers by implementing a special three-year long flexible working time arrangement. In doing so, they guaranteed job protection until the end of 2011 for 1,100 full-time core workers (of whom 8% were women). As part of this strategy, 300 workers from sub-contracting companies were no longer employed, and contracts with 400 fixed-term workers were not renewed after the expiry date. A further 50 workers retired. Their tasks were taken over by the remaining workers.

Working time flexibility

Working time flexibility in Europe

Working time flexibility is a form of flexible labour. Table 2 below summarises the different types of flexible labour.

Table 2: *Forms of flexible labour*

	Quantitative flexibility	Qualitative flexibility
External flexibility	Flexibility through the use of different types of employment status or contract flexibility	Flexibility in the production system, such as outsourcing, subcontracting or the use of self-employed specialists or consultants
Internal flexibility	Working time flexibility	Flexibility in the design of the work organisation: organisational flexibility or functional flexibility

Source: *Goudswaard et al, 2009*

The matrix makes a distinction between internal and external flexibility, referring to the deployment of internal personnel (permanent staff) or external personnel (flexible contracts or personnel from other companies). Another distinction is made between quantitative flexibility, which refers to variation in the number of personnel employed, and qualitative flexibility, which refers to the manner in which tasks are divided or performed (Goudswaard et al, 2009).

Working time flexibility is an example of quantitative flexibility. It is designed to adjust the available labour force to fluctuations in market demand by varying the number of hours worked by a fixed number of workers over time. It does not involve increasing or decreasing the number of workers employed by the firm.

As mentioned earlier, working time flexibility covers a range of arrangements and practices. However, the focus of this study is the variability of working hours: working time arrangements that allow hours of work to vary over the day, week, month, or even an entire year. Examples include flexitime programmes, time banking or working time accounts and annualised hours. Working time flexibility allows employers and employees to modify regular working time patterns.

Case companies also use other forms of flexible labour and combine different methods in order to reach their goals.

Importance of working time flexibility in Europe

One of the goals of the European Employment Strategy is to combine the needs of organisations with the needs of employees through the promotion of more internal labour flexibility and the stimulation of dialogue between all actors. Flexible working time arrangements are seen as a way to address these goals. When companies are able to balance the needs from the market and employees, working time flexibility might lead to higher company performance and to a better quality of work and life for the workers.

The first EU Working Time Directive was introduced in November 1993. This marked the first step made at EU level to establish a legal framework regarding the duration of the working week and other related aspects. Its aim was to determine a set of minimum requirements in terms of safety and health for those working in Europe. In 2003, the new Directive (2003/88/EC) replaced the previous one. Its main provisions related to the duration of the working week (48 hours maximum, including overtime), daily and weekly rest periods for workers, protection for night workers, paid annual leave and a rest break during daily working time. In recent years several attempts have been made to review the 2003 Directive. The European Commission is currently reviewing it, by means of a two-stage consultation of the social partners at EU level and a detailed impact assessment. In December 2010, the Commission published a second-phase consultation paper, which included the views of workers' and employers' representatives on possible changes to the

Directive. The Commission also published a report on how the current working time rules are being implemented in the Member States and made available an independent study on the social and economic impact of the Directive. (For all relevant documents see: <http://ec.europa.eu/social/main.jsp?catId=706&langId=en&intPageId=205>.)

A lively public debate has taken place on many aspects of the Directive. One example is the opt-out clause, which allows Member States not to apply the 48 hour limit to the working week, if the worker voluntarily agrees to this. Other matters of debate include the reference period, multiple employment contracts, on-call time, compensatory rest and work–life balance. Reaching a consensus among social partners around such a sensitive legislation has proved difficult.

The regulation and management of working time has increasingly emerged as an area that can accommodate traditional demands for worker protection and more recent requests from employers for competitiveness-enhancing measures. It can also address the growing expectations regarding effective conciliation and equal opportunities in the workplace. The interplay of these demands can lead to different models and solutions, with a varying degree of emphasis on the different interests at stake. The possibility of finding mutually beneficial solutions is pointed out in many EU documents and initiatives; for example, in the 1997 European Commission Green Paper on Partnership for a new organisation of work (European Commission, 1997) and the Commission's 2007 communication, *Towards Common Principles of Flexicurity* (EC, 2007). The European social partners (CEEP, ETUC, UEAPME and UNICE) openly recognise this opportunity, as is evident in their progress report in view of the Tripartite Social Summit on 13 March 2008 on the reconciliation of professional, private and family life (CEEP et al, 2008). This report was jointly drafted by the European Trade Union Confederation (ETUC), BusinessEurope (formerly UNICE), the European Association of Craft, Small and Medium-Sized Enterprises (*Union Européenne de l'artisanat et des petites et moyennes entreprises*, UEAPME) and the European Centre of Enterprises with Public Participation and of Enterprises of General Economic Interest (CEEP). In this regard, the 2006 ETUC report 'Challenging times – Innovative ways of organising working time: the role of trade unions' (Pillinger, 2006) is also significant.

Another important contribution is the work being done and promoted by the International Labour Organization (ILO). This is in alignment with EU activities and supports the topic of healthy and productive working hours. In 1999 the ILO defined a concept of 'decent work' that involves 'promoting opportunities for women and men to obtain decent and productive work, in conditions of freedom, equity, security and human dignity' (Messenger, 2004; Boulin et al, 2006). Five significant dimensions of 'decent working time' have recently been proposed, based on existing international labour standards on working time and recent research on working time trends and developments focusing on industrialised countries. They are that working time arrangements should: be healthy; be family-friendly; promote gender equality; advance enterprise productivity; and facilitate worker choice and influence over their hours of work (Messenger, 2004).

These dimensions clearly reflect the focus of Eurofound research, which has addressed four key dimensions of quality of work and employment: ensuring career and employment security; maintaining the health and wellbeing of workers; developing skills and competencies; and reconciling work–life balance. A better quality of working life, together with the promotion of employment and entrepreneurship, are central to the European Union's employment strategy (see <http://ec.europa.eu/social/main.jsp?catId=101&langId=en>). It is also key to its social policy agenda, as set out in the EU 2020 Strategy' and the Renewed Social Agenda (see <http://ec.europa.eu/social/main.jsp?catId=547>).

Prevalence of flexible working hours in European companies

The ECS surveys companies with more than 10 employees in all sectors except for agriculture, fishing and private households. This survey is carried out every four years by Eurofound.

The ECS 2009 provides data on 30 countries: the 27 Member States, Croatia, Turkey and the former Yugoslav Republic of Macedonia (FYROM). It examines a range of issues, such as working time, work–life balance and the development

of social dialogue in companies. Table 3 shows the percentage of establishments that make use of different forms of working time flexibility in the EU27 as well as the two sectors and three countries of our case study research.

Some limitations

Some limitations of these data are relevant. One is the non-existence of proper indicators on working time flexibility arrangements in the European Working Conditions Survey (EWCS). As a result, only ‘approximate’ indicators (proxy indicators constructed based on the available data and questionnaire items) could be used. Another limitation is that the ECS consists of a sample of companies with 10 or more employees in all sectors, with the exception of agriculture and fishing (see <http://www.eurofound.europa.eu/surveys/ecs/2009/index.htm> for further detail).

Annex 1 sets out the definitions of working time flexibility as it is measured in the ECS.

Table 3: Working time flexibility in European companies (% of companies)

	EU27	Manufacturing	Retail	Netherlands	Belgium	Hungary
Companies with flexible working time arrangements	56.6	55.6	55.2	62.9	53.3	45.0
In companies with flexible working time arrangements						
Flexitime* for less than 60% of employees	44.7	54.5	44.7	45.6	45.4	50.0
Flexitime for at least 60% of employees	55.3	45.5	55.3	54.4	54.6	50.0
Working time accounts**	69.2	70.0	63.5	70.5	70.5	57.9
Working time accounts (full days off)	77.3	78.3	75.5	79.7	74.6	65.4
Working time accounts long-term (more than one year)	22.7	24.8	20.4	24.6	10.9	6.7
In all companies						
Flexible part-time***	33.3	27.8	32.1	30.4	25.1	24.2
Work at night (between 11pm and 6am)	29.0	36.2	14.4	22.8	29.0	25.0
Work on Saturdays	44.6	37.0	52.6	42.6	43.9	31.2
Work on Sundays	30.8	24.3	23.7	24.5	29.9	23.0
Work on Sundays	41.3	20.9	32.9	26.3	37.9	34.3

* Flexitime is defined as employees’ entitlement to adapt, within certain limits, the time when they start or finish their daily work according to their personal needs or wishes.

** Working time accounts are defined as the banking of hours worked and taken as time off at a later point.

*** Flexible part-time is defined as flexible working hours that are fixed a few days or hours in advance according to a company’s needs.

Source: ECS, 2009

As can be seen from Table 3, over half of all companies surveyed made use of flexible working time arrangements such as flexitime or working time accounts. Over 60% of companies in the Netherlands make use of these arrangements, while 45% of Hungarian companies did so. The most commonly used forms are the short-term working time accounts (less than one year). The long-term working time accounts are used by almost 25% of Dutch companies that use flexible working time arrangements, but only by 11% of Belgian and 7% of Hungarian companies in this category.

As for the more traditional forms of flexible working hours (work outside office hours), night work is found to be more common in manufacturing, while work on Saturdays is more common in the retail sector. No differences occur between the two sectors with regard to work on Sundays.

Prevalence of flexible working hours among European workers

Table 4 shows the percentage of workers that work under different forms of working time flexibility in the EU27, as well as those in the two sectors and three countries of our case study research.

Table 4: *Working time variability and flexibility of European workers in % and means (EWCS 2010)*

	EU27	Manufacturing	Retail	Netherlands	Belgium	Hungary
Daily working hours vary (%)	42.3	30.9	39.8	48.5	49.9	33.5
Weekly working hours vary (%)	32.8	25.8	27.0	37.9	31.8	28.8
Number of working days per week varies (%)	22.9	18.4	20.6	24.5	21.2	22.6
Flexible starting and finishing times (%)	38.2	28.5	31.2	44.1	40.5	31.8
On call time (%)	20.2	14.2	15.3	13.6	20.3	10.4
Shift work (%)	17.0	24.1	20.6	7.0	13.6	17.4
Work at night (mean times per month)	1.32	1.60	0.59	0.97	1.47	1.69
Work on Sundays (mean times per month)	0.65	0.33	0.72	0.58	0.65	0.67
Work on Saturdays (mean times per month)	1.36	0.93	0.59	1.00	1.21	1.12
Average number of working hours per week	37.5	39.3	36.3	32.4	37.3	41.9

Note: For the manufacturing sector, NACE codes 10 to 33 were used; for the retail sector the NACE code 47 was used.
Source: *EWCS, 2010*

In many ways, the Netherlands and Belgium show more working time flexibility than Hungary. Hungary has more shift work and longer working weeks than the other two countries and the EU average. Retail displays more variability in terms of hours per day, but manufacturing involves more shift work and night work. Both sectors are below the EU average concerning working time flexibility, save shift work.

Table 5: *Working time arrangements (%)*

	EU27	Manufacturing	Retail	Netherlands	Belgium	Hungary
Set by the company/organisation with no choice for the worker	59.2	69.6	57.6	35.0	55.0	72.1
The worker can choose between several fixed working schedules	7.7	5.1	10.5	10.3	9.1	4.8
The worker can adapt their working hours within certain limits	15.8	14.3	10.5	34.8	19.4	12.4
Working hours are entirely determined by the worker	17.3	10.9	21.4	19.8	16.4	10.6

Source: *EWCS, 2010*

The EWCS data on how working times are set show that, on average, for six out of 10 employees in the EU, the company determines the working times. In the Netherlands, employees have a relatively high level of influence on their working times, while Hungarian employees have much less control over their working hours. In the manufacturing sector, a higher than average proportion of companies have hours set by management; this figure is slightly below the average for the retail sector. Quite often, employees in the retail sector can determine their working hours entirely by themselves. Further analysis of the EWCS data indicates that the share of workers with ‘no fixed starting and finishing times’ is higher among workers who can influence the working times themselves than those who cannot (Parent-Thirion et al, 2012).

Gender differences in working hours

Table 6 shows that men are more likely to enjoy flexible working hours than women. No gender differences occur when it comes to working in shifts, but men have more flexibility with regard to the hours they work per day and week and the days they work per week. Men working in manufacturing have more flexible working hours. Women workers in retail are less likely to work the same number of hours each week and more likely to work in shifts.

No gender differences emerge with regard to weekend work, although men are more likely to work during the night. In both sectors, women work fewer hours per week.

Finally, men appear to have more control over their working hours than women, particularly in the retail sector.

Table 6: *Working time variability and flexibility by gender*

	EU27		Retail		Manufacturing	
	Male	Female	Male	Female	Male	Female
Daily working hours vary	44.9%	39.2%	42.5%	38.1%	32.8%	26.9%
Weekly working hours vary	25.3%	20.1%	18.9%	21.7%	19.5%	16.1%
Number of working days per week varies	37.2%	27.5%	31.3%	24.1%	28.2%	20.7%
Flexible starting and finishing times	43.0%	32.3%	37.3%	27.2%	30.4%	24.5%
On call time	23.3%	16.4%	18.7%	13.1%	16.2%	9.8%
Shift work	16.9%	17.2%	17.4%	22.7%	26.1%	19.8%
Work at night (mean times per month)	1.7	0.9	1.0	0.3	1.9	0.9
Work on Sundays (mean times per month)	0.7	0.6	0.7	0.7	0.4	0.3
Work on Saturdays (mean times per month)	1.4	1.3	2.3	2.4	1.0	0.9
Average number of working hours per week	40.6	33.9	39.8	34.0	40.5	36.5
Working time arrangements wholly set by company	58.6%	60.0%	52.8%	60.8%	70.3%	68.3%
Worker can choose between several fixed working schedules	6.6%	8.8%	8.3%	12.0%	4.5%	6.3%
Worker can adapt your working hours within certain limits	15.2%	16.7%	9.6%	11.1%	14.2%	14.7%
Working hours are entirely determined by worker	19.7%	14.5%	29.3%	16.1%	11.0%	10.8%

Note: For the manufacturing sector, NACE codes 10 to 33 were used; for the retail sector the NACE code 47 was used.

Source: *EWCS, 2010*

Company-oriented and employee-oriented flexibility

Working time flexibility may be seen from the perspective of the employer or the employee. ‘Employer-friendly’ forms of working time flexibility are those that allow organisations to ‘bring human capital in line with the temporal requirements following from business, e.g., times of customer demands, machine running times, optimal utilisation of capital invested’ (Gareis & Korte, 2002). ‘Employee-friendly’ forms of working time flexibility are ‘those that provide workers with the freedom to adapt their working hours and schedule to meet their own personal and family needs’ (Chung, 2011; see also Kerkhofs et al, 2010).

Chung et al (2007) have analysed the ECS 2004-2005 in order to create working time flexibility profiles. In doing so, they combined the factors outlined above with other measures, such as long-term leave systems, retirement systems and flexible contracts. The authors make a theoretical distinction between company-oriented flexibility and worker-oriented flexibility, as can be seen in Table 7.

Table 7: *Theoretical classification of flexibility options*

		Worker-oriented flexibility	
		Yes	No
Company-oriented flexibility	Yes	Flexible working time Part-time work Phased retirement Early retirement	Unusual working hours (night shift, Saturday shift, Sunday shift) Overtime Temporary employment (fixed-term contracts, temporary agency workers, freelance workers)
	No	Parental leave Long-term leave for care workers, education, other reasons	

Source: Chung et al, 2007

Chung et al (2007) conducted clustered variables and a working time flexibility typology was constructed, with six types of flexibility arrangements; these are outlined below.

- Worker-oriented high flexibility: these companies combine part-time work, long-term leave systems and flexible contracts with flexitime and working time accounts, but also make use of overtime. This category comprises 14% of all companies.
- Company-oriented high flexibility: these companies combine part-time work, overtime, long-term leave systems and flexible contracts with work at unusual hours. This category comprises 22% of all companies.
- Life course intermediate flexibility: these companies only focus on long-term leave schemes and retirement schemes. This category comprises 18% of all companies.
- Day-to-day intermediate flexibility: these companies combine part-time work with flexitime, working time accounts and work at unusual hours. This category comprises 7% of all companies.
- Overtime: these companies only use overtime. This category comprises 18% of all companies.
- Low flexibility: these companies do not have any flexibility measures. This category comprises 22% of all companies.

Working time flexibility in the case companies

All the case companies use several forms of working time flexibility. These include: short-term and long-term working time accounts, variable working hours, shift work, work outside office hours (i.e. in the evening, at night and during weekends), flexitime, compressed working weeks and part-time work.

Working time accounts (or annualised hours)

All case companies use working time accounts. Both retail companies implemented a time banking system based on an average working week over one year, which allows variability in the weekly planning of working hours. This provides

them with flexibility to cope with fluctuations in the demand for labour, which can differ from week to week. Employees are paid a fixed salary on the basis of their average weekly working hours (apart from the fixed-term employees at V&D, who are paid according to the actual hours they work). Whether or not this working time account system poses risks to employees' health and work–life balance depends on factors such as the maximum shift length, the length of the working week, the predictability of working hours and the level of influence employees have over their working hours. Both retail companies use a 'wish book', which workers can use to record preferred working hours or requests for time off. This facilitates a good work–life balance for workers.

Text box 6: Working time accounts at Colruyt and V&D

Colruyt has developed a time banking system involving a working time account for a one year period. Employees on a permanent contract are paid a regular salary based on the average number of hours worked per week. Within one year, workers can work a maximum of 130 hours over their basic working hours (or 100 hours at the request of the employee). They can also accrue a maximum deficit of 40 hours, only on a voluntary basis. Management and unions used the new (group level) collective labour agreement to combine new rules on working hours with new rules about the working time account. The working time account works on a voluntary basis, which means that employees fill in a personal form once every six months (in dialogue with their manager) and choose whether or not to work overtime. They also decide the number of hours overtime they wish to work, on a weekly or monthly basis, and whether or not these hours will be recuperated with leave, pay, or be put into an account. The employee can decide at any moment to begin or terminate a working time account.

Employees with a permanent contract at V&D commit to working a specific number of hours per year. They have a fixed salary per month. The weekly deviation from the average number of hours worked in a week can be 40% for employees who work less than 30 hours per week and 30% for employees who work more than 30 hours per week.

Text box 7: Working time account at Nido

Working time flexibility at Nido is limited, due to the collective character of the production processes in the assembly line. The main flexible working time arrangement is the working time account, which allows the company to change from an eight hour working day to a nine hour working day in high season and allows both management and the (mainly male) employees to compensate for these additional hours at other times of the year. The working time account has a maximum positive balance of 200 hours and a maximum negative balance of 50 hours.

Text box 8: Working time accounts at CabTec and Audi

CabTec uses a working time account over a two month period; this means that, over a two month period, all workers have to work an average of 40 hours per week. This working time calculation improves predictability both for the employer and (mainly female) employees and gives the opportunity for individual employees to take time off. The worker can take one or more day(s) off if they worked overtime the previous month.

As a response to the crisis, Audi introduced a working time account over a three year period. The six day working week was reduced to five days. In 2009, no salaries were increased and the annual premium was not fully paid. Instead all (mainly male) employees got 22 extra days to take off when needed. These were calculated over a three year period. So if someone worked less than the average number of hours in 2009, then they had to work more days and have fewer holidays in 2010 and 2011 when, because of an increase in orders, production increased.

Variable working hours and shift work

In each case company, employees' working hours could vary by day or by week. The specific days employees worked each week could also vary.

The highest variation in working hours was found at Colruyt, followed by V&D. Both retail companies experience great variation in the number of customers they have on a daily and weekly basis. Seasonal fluctuations also occur, related to specific holidays or weather conditions. Since the amount of work required is closely related to the number of customers in the stores, both companies try to adjust their number of workers, so that it matches, as much as possible, the expected number of customers. This results in individualised work rosters with many different shifts, starting and ending at different hours. In retail, working hours are closely linked to the store's opening hours. Some preparatory work needs to be done before a store opens and some work is also required after closing time, but most work is done when the store is open. All of this means that working hours in a retail context is company-oriented and might pose a risk to workers' work-life balance. The extent to which it does so depends on the predictability of work schedules and employees' influence on their individual schedules. For instance, giving staff advance notice of a roster can help create a sense of predictability.

Text box 9: Variable working hours in retail

At the local Colruyt store, employees' working hours vary per day and per week. Employees are scheduled to work on weekly schedules that are highly flexible and individual. Working hours are between 6.00 in the morning and 20.30 or 21.30 in the evening (depending on the day). Working hours before 7.30 in the general store and before 7.00 in the butcher's shop are only be scheduled on a voluntary basis. Employees are expected to share different shifts and working times. The shift length fluctuates between three and nine hours; those working overtime, in exceptional circumstances, can work up to 11 hours.

At the local V&D store, employees' working hours vary per day and per week. Employees are given weekly work schedules that are individual and moderately flexible. Working hours are between 9.00 in the morning and 18.30 or 21.30 in the evening (depending on the day of the week). The store is open from Monday to Saturday, and once a month on Sunday. Shifts vary between four and nine hours for permanent employees and between three and nine hours for temporary employees. For employees on a temporary contract, their average working week is not pre-defined; instead, they work within a specific range of hours each week. This is otherwise known as a flexible contract. All employees will work different times of the day and on Saturday or Sunday, but they can have one or two fixed days off during the week (depending on their contract).

In the automotive sector, the level of variability in daily working hours is much lower than in the retail sector. Work schedules are organised more collectively, as employees work closely together on the (automated or semi-automated) production lines. Variability of working hours per day or week can be linked to seasonal fluctuations in the demand for products, as is the case at Nido. In some departments, the automotive companies have two, three or five shift systems, as well as the day shifts. The type of shift depends on the level of automation involved; one example is the around-the-clock shifts in the computerised section of Audi. It also depends on the optimal use of machines and workspace in relation to the number of products. Due to the nature of the work processes, work schedules have a more collective and regular character than that found in retail. The work schedules and shifts are primarily company-oriented.

Text box 10: Variable working hours and shift work in automotive

At Nido, there is limited variability in working hours. The collective working day in the assembly department starts at 7.00 or 7.30, depending on production numbers, and ends at 16.15 or 16.45. These working hours include one 15 minute coffee break and one 30 minute lunch break. The regular working week is five days (from Monday to Friday), but the production line can be closed for a day or for several weeks (in summer holidays). Despite fluctuations through the year, the average length of the working week is 40 hours, with a range of 24 hours (for three eight-hour shifts) and 45 hours (for five nine-hour shifts).

In general, employees in the crimping and cutting units at CabTec work in two shifts: 6.00–14.00 and 14.00–22.00. All the other production units work in one shift: 6.00–14.00.

There are three basic types of shifts at Audi. The one-shift system is a one day shift, the two-shift system is one morning and one evening shift and a three-shift system is one morning, evening and night shift. The assembly lines run six days per week in a three shift system. A time bank system is used; every worker works five days and can take one day off. Some workers take Monday off, others take Tuesday off, and so on. On the production lines the machines and robots work seven days a week, 24 hours a day.

Work outside office hours

A limited volume of work is carried out in the case companies outside office hours. Only the assembly lines at Audi have around-the-clock shifts, including night work. This means that the most important health risk, which relates to night work or around the clock shift work, is only present in a limited sense in this case study research. It also means that the health risk associated with very early starting times (before 6am) is not present in this study at all.

Working at evening or on weekends may have a negative effect on work–life balance. Employees in both retail companies work (some) early evenings and on Saturday, as the stores are open at these times. At the V&D store, the store is only open one Sunday per month, so employees only work a limited number of Sundays. Other stores, by contrast, are open every Sunday. At Colruyt, working on Sunday is limited and mainly associated with some stores based in tourist areas. The company has no intention of being a forerunner with regard to long opening hours.

Text box 11: Work outside office hours at Colruyt

With the new collective labour agreement, the opening hours at Colruyt stores were extended. The fact that the stores open half an hour earlier in the morning did not change starting times for personnel. Instead, work that takes place before customers arrive is done more efficiently or is organised differently. The fact that the stores close one hour later on Saturday did lead to longer working hours on Saturday. However, the company had no intention of increasing the number of Sunday openings, and this established trust during negotiations with the unions on the new collective agreement.

Flexitime

Flexitime is a form of employee-oriented flexible working time, where employees are allowed to choose the times they begin and finish work. Flexitime can be used to improve work–life balance, and to avoid traffic jams. It is used to a limited degree in the case companies. This is due to the fact that working hours are determined by the demand for labour; relevant factors include a store’s opening hours or the demands of a production system. Flexitime is provided for office

staff, but these jobs were not the focus of this study. However, CabTec did introduce a form of flexitime for its (mainly female) workforce. At Nido, where the demand for adjusted working hours is less prevalent, workers can have adjusted working hours on an individual basis.

Text box 12: Adjusted work schedules at CabTec

At CabTec, workers with young children can start the working day at 8.00 instead of 6.00. This can be seen as a form of ‘collective flexitime’, since flexitime is often used by workers on a regular basis to either start late and bring children to day care or school, or to start and finish early in order to be able to pick them up at the end of the day. This company uses a collective shift system, so this is available on a regular basis.

Compressed working weeks

Compressed working weeks are not usually seen as a form of flexible working hours. The use of this measure in CabTec, however, can be seen as an example, as it is used as a temporary and flexible response to the crisis in the automotive sector. By using a compressed working week, the company was able to save on energy and production costs, while not decreasing the number of working hours. Its use meant that the dismissal of permanent workers was avoided. Compressed working weeks can have negative health effects, due to the long shifts involved (10 hours). However, that usually occurs when the work involved is physically demanding or requires high levels of concentration. Research shows that most negative health outcomes are reported after the first 10 hours of work.

Text box 13: Compressed working weeks at CabTec

During the months of March to May 2009, as a response to the crisis, CabTec modified the working hours at every department and personnel worked four 10 hour shifts per week instead of five eight-hour shifts. The crimping and cutting units’ two-shift system was modified to a one-shift one. Employees with young children worked four eight-hour shifts per week, and their salary was reduced. In practice many of these workers took on a second job or worked in their family greenhouses to earn extra money.

Part-time work and flexible contracts

Both retail companies and Nido allow their permanent employees to have a regular part-time contract when they choose, in order to have a better work–life balance. Both male and female workers avail of this. The individualised work schedules in retail make it easier for the company to accommodate employees’ requests to work different hours per week or per day. Part-time contracts can range from 16 to 32 hours per week. At V&D, flexible part-time contracts also exist, but only for employees on a fixed-term contract.

Text box 14: Part-time work at Colruyt and V&D

The average working week at Colruyt is 35 hours and the company aims for full-time long-term employment contracts. However, employees can work part-time at their own request. This involves individual contracts being adjusted for as long as an employee wants to work part-time; working time accounts are also adjusted accordingly.

At V&D, permanent employees can agree to work either full-time or part-time and their working time account will be adjusted accordingly. V&D also has employees on a fixed-term contract: these employees have more flexible working hours than permanent employees and are paid by the hour. They can work between three and 38 hours per week and work more hours on Saturday and Thursday evening (shopping evening). These hours are scheduled in advance in the general team roster.

At Nido, employees are allowed to work part-time, but they are required to work whole days. This could mean working three or four eight-hour shifts in low season, and three or four nine-hour shifts in high season.

Text box 15: Part-time work at Nido

The HR policy – and everyday practice – of Nido is directed towards granting employees their requests with respect to working time, either by structural part-time contracts or incidental days off, when needed. However, both management and employees agree that employees of Nido should not formulate many requests with respect to taking days off or being compensated.

Employee influence on working hours

This section looks at employee influence, both collective and individual, on working hours in the case companies.

Collective influence: negotiated flexibility

At company level, employees can have collective influence on the rules regarding working time flexibility. In all companies, the working time arrangements have been negotiated between management and employee representatives. All working time measures are negotiated at company or group level in the form of a collective agreement. In these negotiations, unions and works councils have pursued protective measures against an over-emphasis on company-oriented flexibility and have achieved rules that make these measures more employee-friendly. There are examples of rules that protect employees against too much flexibility or from working at ‘unsocial hours’, and of rules that improve the predictability of the work schedules. Room has been created for differentiation among employees. Compromises have been reached between management and employee representation and increased flexibility has been compensated by additional financial allowances or job security.

One example of the effort made by the employee representation in protecting the employees against too much flexibility can be found at V&D. This concerns the range, or bandwidth, of working hours allowed in the working time account.

Text box 16: Negotiated working time flexibility at V&D

The working time account at V&D was introduced more than 12 years ago. Its aim was to create a better alignment between the need for labour and the availability of employees. In the beginning the system was open-ended; by the end of the year, some employees had a deficit of working hours, while others had a surplus. This was an undesired situation for both management and the unions. For management, it led to unnecessary costs and the unions wanted more protection for the employees. They wanted to prevent employees being forced to work extra hours in the summer, to compensate for their deficit of hours worked. The outcome of the dialogue between unions and V&D was the agreement that the bandwidth of working time owed or built up by a worker in the time banking system should gradually decrease from 7% in 2010 to 4% in 2011 and 2% in 2012. The unions wanted it to finally decrease to 0% but they did not succeed in this respect. In addition, the extent to which workers can deviate from the average working week has been reduced, at the request of the unions, from 40% to 30% for those working 30 hours or more per week.

The terms of the working time account at Nido were also debated.

Text box 17: Negotiated working time flexibility at Nido

At Nido, the works council opened a discussion with the local management about the maximum amount of hours that workers could owe the time bank. Originally, the management intended to allow a maximum deficit of 200 hours. The works council organised a consultation with employees. A substantial number of them responded negatively to the proposal, mainly because they feared that the maximum of 200 hours deficit would in practice lead to the reduction of working hours over future years. They also feared that management would strictly enforce rules around the setting of high-peak periods and obligatory leave. A process of negotiations began, in which management and the works council exchanged points of views and shared goals. One final outcome was that the maximum deficit was decreased to 50 hours. Second, although management can declare collective closing days, in return the workers get compensation in the form of additional time off. Representatives of the works council said they were moderately happy with these outcomes.

At Colruyt, a new collective labour agreement was negotiated between management and the unions. An important aim of the unions was to protect employees from too great an extension of working hours in the early morning and evening working hours as a result of the extended opening hours. The working time account at Colruyt already existed, but the company wanted to make this working time arrangement more transparent and more equitable for all employees.

Text box 18: Extending opening hours at Colruyt

Management and unions at Colruyt negotiated a new collective agreement on working hours and the working time account. Part of the debate was about the extended opening hours of the Colruyt stores. Unions wanted to protect the employees from too much extension of the opening and working hours in the early morning, evening and on Sunday. Colruyt could reassure the unions that they had no intention of expanding the general opening hours to Sunday, apart from stores based in touristic areas, and then only during the summer. It was agreed that a compromise could be reached with regard to extended opening hours and the financial compensation for staff.

Unions and works councils in the companies have also been able to increase the predictability of working hours by negotiating new or changed rules that help employees to find a better work–life balance. One example of this is the additional rule on fixed days off at V&D.

Text box 19: Increasing predictability at V&D

Unions at V&D wanted to support a better work–life balance for workers, particularly those working part-time. Employees at V&D with a contract of 20 hours per week or more now have the right to ask for one fixed day off in the week. Employees with a contract of less than 20 hours have the right to ask for two fixed days off in the week. The aim here was to provide more secure working hours and to improve work–life balance. Every six months, these fixed days can be changed by the employee, through dialogue with the manager. The second day off for part-time workers is one of the new rules that the unions negotiated with management in the new collective labour agreement.

Employees with a temporary, flexible contract are also asked to choose two days in the week they would like off. The manager tries to respect these wishes while preparing the weekly roster, though there is no guarantee.

In general, and according to the collective agreement, the actual work schedule is announced two weeks in advance for both groups of workers. However, in practice not all local managers apply this rule.

An increased notification period for work schedules at Colruyt (from two to three weeks) is another step taken to increase the predictability of working hours. In addition, the higher level of transparency regarding the new working time arrangement (supported by an information system) helps both managers and employees to know at any moment ‘where they stand’ with regard to the hours they worked and the hours they are to be compensated.

The actual collective agreements are the result of a negotiation process between management and employee representation. The final agreement reflects a compromise between the original demands from management and unions. An important part of the negotiation process was about issues other than the working hours. Employees appraised the final outcome positively; this is due to financial benefits. Examples include ‘inconvenience allowances’ at Colruyt and Nido and the financial compensation for breaks provided at CabTec.

Employees’ positive response to the negotiation also related to increased job security measures; this can be seen in both companies in Hungary. These employees clearly understood the need for more flexibility in order for the company to survive. This helped them to stay motivated and improved willingness to be more flexible. The job security that was promised to permanent employees was an important part of the negotiation process.

Text box 20: Negotiated working time flexibility at CabTec and Audi

At CabTec, workers had limited influence on the working time flexibility arrangement. However, both employees and the works council understood the necessity of relevant measures in order to protect jobs. Measures included the introduction of a compressed working week, the change from two shifts to one, and the reduction of working time for women with young children. The new break system and its compensation is seen as one of the works council’s biggest successes: 20 minutes out of the 30 minute daily breaks are now paid, representing an increase in salary for the blue-collar workers.

The management of Audi and the representatives of the trade union and the works council worked together on a common aim of protecting jobs. Flexible working time arrangements have been implemented with the support of all parties (management, trade union, works council and employees). An extra 22 days off for workers were a compensation for the static salaries and a decreased premium. The employer announced the compulsory days off, which were mostly concentrated around holidays. Employees were informed in advance about this so that they could make plans with their families.

At Audi, job security was more important to employees than control over working hours. All the full-time permanent workers got their normal salary, which is above average in the region, so none of the workers had to find a second job during the crisis. The employees did not have to worry about losing their jobs as the collective agreement included a promise from management to protect existing jobs for a three year period.

Individual influence: tailor-made employment relations and informal practices

At individual level, employees can influence their daily working hours. Some of these companies allow tailor-made employment relations that support employees in making individual plans for their working hours. At an individual level, employees can also influence their working hours in a more informal way: in dialogue with their manager or the local planner and by means of discussing their preferences.

Collective rules do apply to working time flexibility. However, these rules still leave room for change. The voluntary basis of the working time account at Colruyt is a good example. The text box below shows the various ways in which employees can influence their working hours at Colruyt.

Text box 21: Employee influence on working hours at Colruyt

Long-term planning: employees can fill in their (long-term) requests for holidays on the year plan;

Mid-term planning: mid-term requests can be put in the ‘wish book’ and will be taken into account in the three week planning process;

Ad hoc changes: any short-term requests about working hours can be met by changing shifts with colleagues.

Each worker’s monthly salary sheet provides information regarding the amount of overtime and recuperation time they have saved and the benefits they receive. Employees are paid by the minute and a points system guarantees that all overtime will be registered.

The fact that employees can choose to work part-time is an example of employee influence over the number of hours they work. In the Netherlands part-time work is done on a more regular basis by large groups of employees, in particular in sectors with a high proportion of women workers. At Colruyt, most contracts are full-time and most employees are men; these employees can choose to work part-time. At V&D permanent employees have a contract for a specific number of hours per year, but are being paid on the basis of their average working week. Employees can then choose their average working hours. At Nido, employees are informed of their legal right to work part-time, and these requests are met by the company; this is unusual for the automotive sector. Women with young children at CabTec can choose to start work at 8.00 instead of at 6.00 for as long as they need.

Finally, employees can influence their working hours through informal, day-to-day practices. This is facilitated by a culture of ‘give-and-take’ within the companies, the fact that employees can express preferences regarding work schedules and that these demands are granted, whenever possible.

Text box 22: Employee influence on working hours at Nido and CabTec

The working time account at Nido is designed so that workers work more hours in high season and take time off in low season. Short term requests for time off are granted if necessary, even in peak season. However, the employees at Nido do not make many requests for days off.

At CabTec, the possibility of taking time off in the two month time banking system helps provide more individualised working hours. If the worker has worked overtime and knows when they want to use these hours as time off, the head of the department is informed. If possible, the request is granted.

Workers with disabilities at CabTec get two days off every month. Most of these workers have an appointment with their doctor every two weeks; they can use this time off for this purpose.

Both retail companies use a ‘wish book’, in which employees can indicate short-term preferences with regard to working hours or days off. For example, they can indicate that they do not wish to be scheduled before 10.00 on a specific day or after 16.00 on another day. Both male and female workers use this wish book to improve their work–life balance. This system depends on the skills of the manager (or planner) to prepare a work schedule that accommodates as many requests as possible. Responsibility also rests with employees, who must share their preferences. In both retail companies, specific attention is paid to the training skills of lower management; HR management understands the crucial role of this group in the flexible working hours system.

In the automotive companies, employees’ requests mainly relate to taking days off; requests regarding preferred working hours are less likely here than in the retail companies. In the case of Nido, management can decide to change the working day from eight to nine hours; this affects all staff. Management can also assign some collective days off. But employees are allowed to take leave from their time account when they choose; this is agreed with a manager. Management seeks to grant individual requests.

In the two Hungarian automotive companies, management can decide when to close the production line.

Working time flexibility and productivity

In this study, the term productivity is restricted to labour productivity, 'output generated divided by the number of hours worked'. In the research literature, this strict definition is not typically used; other studies refer to productivity, performance and output.

Productivity is the ratio between outputs and inputs of an organisation's production process. The input factors include labour (man hours or full-time equivalents), capital goods (machines, equipment) and resources (people, money, raw materials, power, etc.). The outputs of an enterprise may be defined in terms of physical volume (number of products or tons produced). This notion of productivity, where inputs and outputs are often of a tangible and quantifiable kind, originated in the traditional manufacturing industry, where the monitoring and managing of productivity are relatively straightforward. Productivity is regarded as synonymous with a company's performance or achievement (Oeij et al, 2012).

Company-oriented working time flexibility can be reasonably expected to increase productivity and company performance. By introducing company-oriented working time flexibility, a company will be able to better adjust the number of hours worked to market demands, thus avoiding underutilisation of their (internal) workforce.

However, some studies indicate that employer-friendly flexibility (both internal and external) has no positive effects on productivity. For example Valverde et al (2000) found that performance, measured through managers' perception of how well the company was doing in terms of financial turnover, only had a statistically significant impact for temporary contracts. No relationship was found between productivity and other types of flexible contracts, such as fixed-term contracts, subcontracting or forms of internal flexibility such as part-time contracts or annualised hours. Michie and Sheehan-Quinn (2001), while examining the impact of flexible work practices, human resource systems, and industrial relations on corporate performance, established that increasing flexibility, while positively correlated with short-term financial performances, was negatively correlated to innovation within the company. A study conducted by Wolf and Beblo (2004) suggests that highly flexible work time accounts yield less efficiency gains than arrangements allowing moderate flexibility. The authors state that as long as the implemented work time model is highly flexible in only one dimension (hour variation, balancing period or percentage of employees), the overall effect is still positive. However, if the arrangements cover two of the three indicators, the efficiency effect of the arrangement becomes negative. (This last conclusion may be skewed by the fact that the most flexible arrangements are being used in companies that are already experiencing some performance problems.)

Flexible working time arrangements thus only lead to a more efficient production to capacity if they allow moderate flexibility. They are not a tool to be applied in an extreme sense and for all employees. Wolf & Beblo (2004) challenge the commonly held assumption that flexible working hours increase productivity and job satisfaction and the commitment of employees. The authors argue that '...the adoption of flexible time schedules does not necessarily shift the production function as a whole, but rather increases the efficiency of the production process'. Finally, a study by Haipeter (cited in ILO, 2007) describes a number of different German firms that introduced flexible working time arrangements, such as flexi-time and time bank accounts. The findings are both positive and negative. A positive link with productivity was found for companies seeking a balance between their requirements and the interests of their staff. No positive link is found for those companies providing long-term time accounts, through which employees can accumulate overtime hours over long periods of time, which can be exchanged for time off for extended periods.

These somewhat mixed results seem to indicate that it cannot be assumed that every organisation that adopts flexible working time arrangements will have consistent gains. The degree of flexibility that is adopted appears to influence outcomes. A moderate degree of flexibility leads to gains in technical efficiency. Highly flexible work arrangements lead to no additional benefits in terms of efficiency gains. These findings may be affected by the fact that firms introducing highly flexible working time arrangements may be in a difficult economic situation anyway.

One relevant and important conclusion of this study is that an increase in flexibility does not always lead to an equal increase in productivity. Organisations that operate shorter-term working time accounts have better results than those with longer-term systems.

According to a number of authors (Hill et al, 1998; Igarria et al, 1999; Kelliher & Anderson, 2010; Messenger, 2004; Golden, 2012) workers' ability to choose their working time arrangements has a positive impact on job performance and productivity. This choice turns out to be a powerful factor in determining an increase in productivity. It results in a more satisfied workforce who are more committed and productive.

Employee-friendly working time arrangements help to improve employees' work-life balance, thus contributing to the retention of employees (Chung, 2011; Schieman et al, 2009; Voydanoff, 2004). Conversely, ignoring this issue may lead to a situation in which employees act contrary to the organisation's interests, through increased absenteeism, lateness, reduced focus on the job tasks, attention being diverted to personal matters, and ultimately searching for alternative jobs and resigning.

Employee-friendly benefit packages may also improve the corporate image as perceived by potential customers and the general public, which may lead to greater sales and improved stock prices of the company (Dex & Scheibl, 1999; Evans, 2001). It may have a positive association with talent management and recruitment policies as it lowers staff recruitment and training costs (Grover & Crooker, 1995). However, employee-friendly working time flexibility may also have negative effects on productivity. Arrangements that are advantageous for employees may be disadvantageous for business. Companies would probably consider such forms of working time flexibility as being rigid, not flexible.

Analysis on ECS

Eurofound carried out secondary analyses on data from the ECS (2009) to study the relationship between working time flexibility and company performance. Companies included in the survey were asked to measure their performance against the average rate of labour productivity. This was a subjective assessment. When these data were combined with different forms of working time flexibility, a positive relationship emerged between flexitime practices and self-reported labour productivity. This relationship seems to be stronger for certain economic sectors; for example it is stronger in retail than in the manufacturing industry. This finding was confirmed by regression analyses (Eurofound, 2012). However, it is not possible to determine the direction of this relationship: does flexitime enable a better performance or does a better performing company allow flexitime? The relationship between productivity and other types of working time flexibility, such as working time accounts, was more relevant to this study. The regression analysis shows no significant relationship exists with working time accounts generally. The only working time account that seems to have a significant positive effect on labour productivity is the long-term working time account. Next to this, establishments with flexible part-time contracts report higher labour productivity, while the presence of (regular) part-time contracts seems to have a negative relationship with labour productivity.

Looking at the manufacturing sector, secondary analysis did not establish a significant relationship between flexitime, working time accounts and labour productivity. A negative relationship was found with the presence of regular part-time contracts and overtime being compensated financially or by extra time off. In retail, a positive relationship was found between flexitime, (not compensated) overtime and labour productivity. In this sector, no significant relationship was detected with working time accounts or part-time work, neither was there a relationship with overtime that was compensated financially or by extra time off.

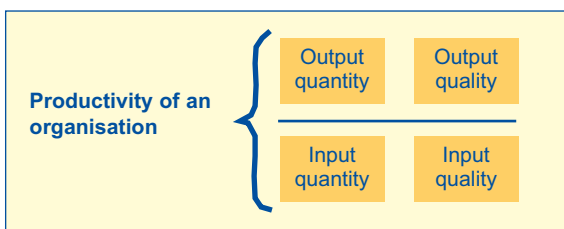
The results from the literature and secondary data are mixed. Sometimes working time flexibility emerges as cost-effective, sometimes it does not. The circumstances of each outcome remain unclear. This is one of the reasons this case

study research was conducted – to help to understand when working time flexibility is or is not cost-effective. We assume that working time flexibility is less cost-effective when arrangements are set unilaterally by management.

Implications for productivity and other employer outcomes

Productivity is the ratio between quantitative and qualitative outputs, and inputs of an organisation’s production process (see Figure 2). Output can be measured by sales or number of products. Output quality can relate to the level of a service or quality of a product. Input can be measured by the number of hours worked by employees. The quality of this input can be measured by workers’ qualifications.

Figure 2: *Measuring productivity*



Source: *Oeij et al, 2012*

Companies can choose from five productivity strategies: output increase at constant input; input decrease at constant output; output increase and input decrease; output and input increase, with the increase in input proportionally lower; and input and output decrease with the decrease in output proportionally lower (Misterec et al, 1992).

Table 8 summarises the main productivity challenges of the case companies and the main productivity strategies taken (i.e. whether they focused on output, input or both). The table also shows the main measures taken to increase productivity, including working time flexibility measures.

Table 8: *Challenges, productivity strategies and measures taken*

	Main productivity challenges	Productivity strategy	Measures to increase productivity
Colruyt	Keeping up the market share, guaranteeing the lowest prices and following competitors, in a context of rising costs for raw materials, wholesale products, wages and energy and decreasing sales per customer due to the economic crisis.	Higher sales are needed to compensate for lower profits; more effort is needed for the same amount of sales. Personnel costs should increase at a slower pace than sales. Longer opening hours with the same number of hours worked; harmonisation of opening hours between stores for lower PR budgets.	Continuous improvement of work processes; Functional flexibility; Flexible working hours per day and week (perfect match of demand and supply for labour); Formalising the working time account (less overtime costs and better planning); Extending opening hours and working hours on Saturday evening; Working students for summer holidays and Saturdays.
V&D	Keeping up sales targets, with a decreasing volume of customers and strong competition from internet shopping; finding a right balance between price and service level.	Saving personnel costs by using a combination of a lower number of hours worked and the use of lower-paid personnel; increasing sales by improving service level.	More precise personnel planning (better match between demand and supply of labour); Flexible working hours per day and week; Working time account; Fixed-term (flexible) contracts; Functional flexibility.

	Main productivity challenges	Productivity strategy	Measures to increase productivity
Nido	Pressure (within the group) for a gradual increase in productivity in order to remain competitive within the sector.	Produce an increasingly diverse and complex mix of machines in a more efficient manner and with fewer hours worked on the production line.	Continuous improvement of work processes and technology; Functional flexibility; Temporary agency contracts in peak period; (More flexible) working time account.
CabTec	Surviving the crisis and at the same time holding on to qualified personnel.	Saving start-up costs for production line; Saving personnel costs (white-collar workers); Finding new markets and creating new products to increase sales.	Compressed working week (from five to four days per week); (Unpaid) overtime by white-collar workers; Short-term working time account (match between demand and supply); Development of new products and markets.
Audi	Surviving the crisis and at the same time holding on to qualified personnel.	Drastic lowering of the number of hours worked – decreasing operating days of production from six to five days and closing production for some days during a three year period; All work conducted by the remaining personnel; Limiting (re)training costs after the crisis.	Long-term working time account (match between demand and supply); Compressed working week; Subcontractors and fixed-term contracts ended during the crisis; Functional flexible core workers doing all remaining work; Shift work (two and three shifts).

Working time flexibility is one of the measures taken to increase productivity. Companies adopted several measures at the same time, in order to achieve their aims. Working time flexibility alone could not address the challenges they faced. Nonetheless, certain forms of working time flexibility were at the core of these productivity strategies, namely variable working hours and working time accounts. Increasing working time flexibility and improving existing arrangements comprised part of a continuous process of improving labour productivity; they were also part of a cost saving strategy. This is the case for the forms mention above, as well as compressed working weeks and shift work systems. Regular part-time work or flexitime systems did not form part of these strategies; however, they were incorporated in such a way that they did not hamper productivity. For example, regular part-time work can be used as part of a company strategy, in expanding opening hours or coverage during peak periods. This is regularly done in retail, though both case companies only did so on a limited basis. Working outside office hours also formed part of these strategies, though always alongside variable working hours or shift work.

The case companies faced multiple challenges. These included short-term (daily or seasonal) and long-term fluctuations in the market, as well as strong (international) competition within the sector. They also operated in an economy that ran 24 hours a day, seven days a week (abbreviated as 24/7).

Fluctuations in market demands

All companies face fluctuating market demands, be they short-term, long-term, or both. The strongest long-term fluctuation was experienced in the automotive sector, due to the sudden drop in demand caused by the financial crisis. Both Hungarian companies had to adjust to this sudden downturn. In order to respond to a drop in demand, they needed a similarly drastic decline in production and labour costs. Nido, whose clients are mainly in the public sector, was not

affected by the crisis. This company's main challenges are the strong seasonal fluctuations and producing machines as quickly as possible.

Both retail companies also felt the impact of the economic crisis, including a change in the behaviour of customers who began to spend less money and to conduct more shopping on the internet. However, this change was not as sudden or as strong as that encountered in the automotive sector. Traditionally, retail companies also face seasonal and day-to-day fluctuations in the demand for labour, due to daily variations in the number of customers and sales. One of their challenges lies in achieving greater efficiency in the use of existing labour in order to cope with these fluctuations.

Competition

All case companies face strong national or international competition, or both, as well as continuous pressure to lower prices while maintaining the existing quality of products and services. It is important for all case companies that they maintained or increased the value of their market shares. At Nido, a continuous increase in productivity is required, in order to compete within the holding company, and to reach shorter throughput times. For a company like Colruyt that guarantees the lowest prices, a continuous and gradual improvement of productivity is a prerequisite to keeping up with competitors. In order to keep guaranteeing the lowest prices, personnel costs should increase at a slower pace than that of sales. Longer opening hours do not necessarily mean higher sales, and costumers spend less money per visit, so more effort is needed to keep up or increase sales.

Strong competition also leads to the renewal of market strategies. For V&D, the main challenge is the transition from a high service level organisation to a more self-service and lower cost organisation. The company navigates between these two concepts. This leads to an increasing level of pressure on labour productivity and efficiency. At the same time, service levels must be maintained. For CabTec, the economic crisis has led to the development of new products and the discovery of new markets, which was necessary in order to reduce its vulnerability and increase its competitiveness. This requires flexibility in technology, work processes and in personnel. For both Hungarian automotive companies, the optimal use of expensive equipment and keeping production costs as low as possible were important steps in surviving the competition and the crisis.

Around the clock nature of the economy

The 24/7 character of the economy affects the operation of the case companies only to a moderate degree. In the automotive companies, some work processes are carried out around the clock. At Audi, this is due to the demand for optimal use of expensive production equipment or because of the high costs attached to starting the production process. At Nido, this relates to shorter throughput times. The retail case companies experienced increased pressure to extend the opening hours of stores. However, national legislation and collective agreements prevent the stores from being open on a 24/7 basis. Neither company intends to be forerunners in this respect, partly because they do not believe that extending opening hours will lead to a corresponding increase in sales. They feel that customers will not spend more money, but shop at different hours instead.

Responses to the challenges

The case companies responded to these challenges in a number of ways. Examples include adapting the number of hours worked, lowering production and labour costs and influencing the output through changes in production time or opening hours. Working time flexibility appears to be only one aspect of this process.

Adapting the number of hours worked

All companies aim at using existing working hours as efficiently as possible. This involves making use of all forms of quantitative flexible labour: working time accounts, variable working hours, flexible labour contracts, and in-sourcing and outsourcing of activities. At Colruyt and V&D the working time accounts and variable working hours are used in

order to reach a perfect match between the demand for and supply of labour. At Nido, the working time account is used to adapt the number of hours worked to seasonal fluctuations. Flexible contracts are very important to Audi: this company could easily reduce the number of hours worked during the crisis, by ending all such contracts. Flexible contracts are also important in helping Nido cope with enormous seasonal fluctuations: the company would not be able to permanently employ a core workforce that is large enough to cope with the peak periods. For V&D, flexible contracts are used to bring even more flexibility to working hours than that provided by the time banking system alone. In the automotive sector, the chain linking the supplier to the end-producer is one of the key aspects of the production process. In-sourcing or outsourcing parts of this production process can also form part of a company strategy. At Audi, 300 workers from sub-contracting companies were let go; their tasks were performed by the functionally flexible core workers at Audi.

Lowering production and labour costs

Several methods are used to control personnel costs, related to overtime, inconvenience benefits and basic salaries. Working time accounts are less costly than overtime. By compensating workers with time instead of money, the company can avoid costly overtime payments. At CabTec, a compressed working week was used to lower production costs by closing the production line on the fifth day. At Audi, the reduced operating time (from six to five days) helped to reduce costs. In each case study, management put a strong focus on reducing costs, which impacted daily practice at the work floor. Examples include the top-down budget for staff in V&D, and the formalisation of the working time account in Colruyt.

Functional flexibility of the core workers is seen to be one of the most important measures at all three automotive companies. It was also used in the retail companies on a regular basis. Its use means that the core employees can work as efficiently as possible. At Audi, a functional flexible workforce could perform all tasks previously conducted by subcontractors, when those contracts were ended. The continuous improvement of work processes, as in Nido and Colruyt, also lowers production costs.

Adapting output through changes in production time or opening hours

In retail, opening hours are associated with an increase in ‘production time’, in order to meet customer demands. In the automotive sector, production time decreases with a downturn in demand. At CabTec, this is combined with the development of new products and the search for new markets.

The relationship between working time flexibility and productivity

It is not easy to isolate one single measure (working time flexibility) from all other recorded measures and determine its direct impact on labour productivity. Flexible working arrangements tend to be introduced at the same time as other changes. They also tend to evolve organically. For these reasons, this section includes the subjective views of management and employees. It also attempts to answer a hypothetical question: what would happen if working time flexibility was not available?

Labour productivity: direct relationship with the management of labour resources

With the introduction (or improvement) of flexible working hours, several companies were able to find a better match between the demand for labour and the number of hours worked. Both the working time accounts and the option of working different days help to reduce both overtime and the underutilisation of personnel. This has a direct positive link with labour productivity, as can be seen in the examples of Colruyt and Nido. At Nido, management feels that a productivity gain is reached by using the working time account more flexibly. Employees feel that the limits of this productivity gain have been reached.

Text box 23: Working time flexibility and labour productivity at Nido

Nido measures labour productivity as the ratio between planned production time (number of machine hours planned) and actual production time (number of employee hours worked). A small albeit consistent positive relationship was found between worker labour productivity and the introduction of the new working time account. Around the introduction of the working time account, labour productivity increased. However, the effects are small and can be associated with other factors influencing productivity; for instance, management's orientation towards productivity and the recent availability of data that guides this strategy.

Employees stated that management's focus on productivity has increased. In the work planning process, machine hours are being cut by a budgeted amount. At the same time products are getting more complex. The employees feel that the limits of actual time spent on construction work at the workstation may have been reached; further increases in productivity may therefore be limited.

Management argues that the new working time account allows the company to shift more easily from eight to nine hour working days. This has resulted in a productivity gain, both in terms of worked hours per unit of output as well as in terms of labour cost per unit of output. This is especially relevant when going from a peak to low period.

For Colruyt, the high level of working time flexibility is necessary due to the strategic decision not to use part-time contracts. The only way to reach high productivity figures while mainly employing full-time permanent employees is by increasing the internal flexibility of the workforce, in particular the flexible working hours.

Text box 24: Working time flexibility and labour productivity at Colruyt

At the supermarket at Colruyt, productivity is calculated as the ratio between the weekly turnover and the number of hours worked. Perhaps the change in the working time system did not lead to that many changes, but the working time account and the variable working hours, with individualised work schedules, are responsible for high productivity and low costs. Around 45–50% of added value at Colruyt is influenced by personnel costs. If a supermarket lets one worker be unproductive on a daily basis, this affects some 4% of daily personnel costs. It is important to manage these costs carefully and to plan work schedules in such a way that there are no more people working in the store than is strictly necessary at any time. Sales figures from the past are translated into detailed projections about the needed number of personnel in the future. By creating a perfect match between capacity and demand, the supermarket can keep up with the increase in sales without having to increase the number of workers on duty. For this purpose, Colruyt has implemented a strategy that is unusual for the branch that involves a combination of full-time and long-term employment contracts, flexible working hours and a time banking system. An alternative strategy would have been to work with part-time, short term or on-call contracts.

Indirect impact through the introduction of additional measures

Employees and management in the case companies also argue that there is an indirect link between working time flexibility and labour productivity. This is due to the fact that the introduction (or change) of the flexible working time arrangement occurred alongside supporting measures in the fields of management and planning of working hours. An example of a supporting measure is the improved management information systems (Colruyt, Nido and V&D) that help plan the number of hours worked against the demand for labour. Other professional systems support local managers in their daily work planning, and give employees access to their individual accounts.

Text box 25: Better personnel planning at V&D

With the new collective labour agreement at V&D the range of working time options in the working time account was decreased. Specifically, a decrease occurred in the number of hours employees can work that are over and below their set annual hours. This measure had a positive influence on productivity, according to both management and employee representatives, as floor manager are forced to improve their planning of working schedules. This leads to a reduction in the difference between permanent employees' set hours and hours worked. This saves labour costs, thus lowering the average hourly costs. An additional benefit is that it increases work predictability for employees.

At Colruyt, work processes were changed, in order to accommodate changes in working hours. This is another example of an indirect effect; changes in working hours caused a boost in efficiency.

Text box 26: Improving work processes at Colruyt

Productivity at the Colruyt supermarket rose steadily following the employment of a new manager. According to that manager, the supermarket is doing the right things. The growth in sales turnover has been achieved through a reduction in the number of new workers. The company constantly seeks to increase the efficiency of the work processes and raise cost awareness among workers. Opening hours were extended by half an hour in the morning, while working hours were not. This meant that the work processes in the early morning needed to be discussed and adapted. This has led to greater efficiency in the morning and during the rest of the day. As a practical example, no time is spent rearranging shelves during the day, as a customer survey revealed this was unpopular. This reduced working hours by 30 hours per week. Another improvement was to let employees decide for themselves which carts need unloading. This saves about 18% of time for the team coordinators.

At Nido, a more flexible approach to the working time account helps the company to meet seasonal fluctuations better. The company used to change from an eight to a nine hour working day throughout the high season for all production departments. Now it is more flexible, and such adjustments depend on the department in question and the production needs. This 'saves working hours', which can be used at other moments in the year. By contrast, at V&D, becoming less flexible regarding working time led to better planning and a better use of human resources.

Finally, training for local managers was identified as another important measure in improving productivity. Both Colruyt and V&D pay attention to this issue.

Text box 27: Navigating between number of working hours and labour costs at V&D

V&D measures the performance of the stores by two indicators: sales and labour costs (number of hours by costs per hour). Productivity is calculated as the ratio between the sales and the number of hours worked. V&D tries to optimise the ratio by addressing both costs and the level of service. Each week, the store manager receives an overview of productivity figures. The monthly personnel budget is based on performance in the previous month. The floor manager decides how to use this budget. In doing so, they consider the number of hours worked and the labour costs that correspond with those hours. The maximum number of hours worked is determined by the budget divided by the labour costs. The labour costs depend on the time of day that will be worked (inconvenience benefits can apply) and the types of worker contracts – the more experienced permanent workers are usually more expensive than temporary employees. A permanent employee with too many hours in the time bank can also be expensive.

The greater the number of personnel on duty, the greater the labour costs. However, extra staff can have a positive effect on sales. This complexity means that the skill of the floor manager plays an important role in ensuring flexible working hours have a positive impact on production.

Impact on labour and production costs

Both automotive companies in Hungary achieved a reduction in labour and production costs by reducing the number of hours worked by external personnel and changing the tasks and working hours of internal personnel. They were able to change their shift system and production time, in order to reduce production costs and cope with a strong downturn in the demand for products.

Text box 28: Reduction of labour costs

By changing the working hours from five eight-hour shifts to four 10 hour ones, CabTec saved on costs involved in starting and stopping the production line. By changing from a two-shift to a one-shift system, the company adjusted to the decrease in demand and saved on personnel costs. (A two-shift system is one morning and one evening shift from Monday to Friday, while a three-shift system is one morning, evening and night shift from Monday to Friday.) The productivity of the white-collar workers increased as they completed a five day week in four days, at least officially. They also widened the product range, found new partners and made new contracts. The productivity of the blue-collar workers did not decline. After the introduction of the modified flexible working time arrangements, no growth occurred for a few months, but after this productivity began to increase.

Audi reduced the production time from six to five days per week. One fifth of permanent employees were moved to different production activities. As most of the blue-collar workers were trained in more than one type of work, this worked well. A total of 300 workers from sub-contracting companies were let go; their tasks were taken over by the functionally flexible full-time core workers, who were delegated to these sections from the assembly lines. The contracts of 400 temporary workers were not renewed when they expired. These workers' jobs were also taken by the functionally flexible full-time core workers. A further 50 workers retired and their positions were filled up by other core Audi workers.

With regard to personnel costs, a mixed picture emerges. In some cases, the costs per worker increased due to increased inconvenience benefits. In other cases, labour costs went down, as was the case with the white-collar workers at CabTec.

Other indirect costs that went down include those related to training, absenteeism and personnel turnover. This was due to the balanced way in which changes were implemented.

Indirect impact through employee influence and motivation

The research literature shows an indirect impact of working time arrangements on productivity. Although this could not be empirically verified by available data for these case studies, stakeholders across the different case studies felt that highly motivated, loyal and skilled personnel support a company in increasing productivity, in achieving lower costs and in maintaining the quality of products and services.

The two Hungarian cases show a highly dedicated workforce that – in exchange for job security – is more focused and concentrated on the work, and therefore more productive.

Text box 29: Motivation of employees at CabTec

At CabTec, increased concentration and focus among employees led to above-target levels of productivity. worked more concentrated, they reached a productivity that was above target. All the blue-collar workers kept their full salary. Although white-collar workers saw a reduction in their salary, they worked with extra intensity, which demonstrates loyalty to the company. These employees did not look for other opportunities at other companies but stayed at CabTec and accepted the modified working time arrangement.

Company management believes that steps such as investing in employee-friendly forms of working time flexibility, increasing employees' influence on their working hours and investing in good working conditions will pay out. As described earlier, several companies allowed employees to work on a (regular) part-time basis or to work adjusted working hours in order to create a better work–life balance. Effort was made to improve employees' control over their working hours and the level of predictability regarding time off.

Both managers and employee representatives shared the belief that increasing employees' control over working hours improves their work–life balance, as well as motivation and individual productivity.

Working time flexibility and working conditions

Working time flexibility and health and work–life balance

A large body of research explores the relationship between working hours and occupational safety and health. Much of this literature focuses on the relationship between ‘non-standard working hours’ and health outcomes (Klein Hesselink et al, 2010; Goudswaard et al, 2009; Blok & De Looze, 2011; Akerstedt et al, 2009; Caruso et al, 2004; Folkart & Tucker, 2003). In particular, it looks at the impact of around the clock shift work and very long working hours. The negative effect of night work on health relates to the human biological clock, which is set to day activity. Working at night is more exhausting than working during the day. Body functions become less active, due to hormonal secretion. Sleeping at day time is less restorative, because the body functions are set to optimal activity. Most people will not experience serious negative effects after one night of work, but problems can emerge following a series of consecutive night shifts. These include fatigue, decreased productivity and emotional exhaustion (Knauth & Hornberger, 2003). The immune system becomes less effective, so people are more vulnerable to health problems (Klein Hesselink & Goudswaard, 2012).

In the literature this negative health impact of long working hours is most often confirmed when working days last 10 hours or more and working weeks last 48 hours or more. In Europe, long working hours are mainly related to working overtime (outside of the standard employment contract), the compressed working week, and being self-employed (Klein Hesselink & Goudswaard, 2012). Long working hours are related to increased tiredness, but they also aggravate the effects of other job demands. Physical work, for instance, may lead more rapidly to musculoskeletal problems in the case of long working hours. The type of work therefore is an influencing factor. Work that is not exhausting and that involves a variety of tasks is considered more appropriate for long working days than exhausting and repetitive work.

Working at the weekend (during the day) generally has the same effect on health as daytime work during the week. The difference is that weekend work has social implications regarding workers’ family life and social activities. Work at non-standard times may cause stress and emotional problems (Jamal, 2004). These problems may also emerge from the tension of not being able to combine work and private life.

Many of the effects reported in the literature have a limited relevance in the context of western Europe; working time legislation ensures that many existing work schedules are relatively healthy. Moreover people tend to leave their job when problems related to non-standard working times or long working hours emerge. Only those who are able to work long, non-standard hours remain; this is known as the healthy worker effect. This is visible in the good health often observed in older shift workers. Younger workers are often considered to be more suited to shift work (Klein Hesselink & Goudswaard, 2012).

Working time flexibility

The European Commission published a study to support an impact assessment on further action at European level regarding Directive 2003/88/EC and the evolution of working time organisation (Deloitte for the European Commission, 2010, pp. 31-32). According to its findings, it is difficult to assess the impact of various types of working time flexibility arrangements on employees’ health, wellbeing and work–life balance. That is because they are implemented in different ways, depending on the context. For this reason, this section examines the specific role of each basic element of the flexible working hours arrangements, such as the variability of flexible working hours, the sense of control for workers and the reliability of the flexible schedules.

In terms of the variability of working hours, a possible connection is proposed between this and with negative health and wellbeing consequences similar to those experienced by shift workers. Examples include sleep and digestive problems and problems related to social life. Such problems do seem to occur more frequently in situations where the company

controls working time. Even when the employee has control, the highly irregular nature of working hours seems to cause these problems to occur. When flexibility at work leads to unpredictable schedules, this has a clear negative effect on work–life balance, though the extent of this effect on employees' health and wellbeing is not so clear.

Costa et al (2003) note the difficulty of assessing the impact of working time flexibility on work–life balance and health, partly because the issue is multi-dimensional. Employer-friendly working time flexibility may be detrimental to workers' health, if working time flexibility leads to more intense work, greater irregularity in work schedules, less income security, and less control over working time. According to Kelliher and Anderson (2010), more intense work may go together with working more hours and working harder, but it does not necessarily imply that employees are less satisfied. The opposite can be also true. Presumably, employees are compensated for working more intensely by a bigger income, job security or other benefits from their employer. For some, however, more intense work may cause job-related stress; in Patterson's words, 'that the working week has now been eroded and replaced by the waking week' (Patterson, 2001). It is well known that flexible working hours and long periods of intense work can lead to stress (Oeij et al, 2006).

Employee influence on working hours

Individual worker influence over the design of working time schedules and working hours is a known important factor in preventing health risks and facilitating work–life balance. However, some studies show that even a high level of control over working time cannot prevent a relationship occurring between highly variable working hours and negative health outcomes (Eurofound, 2011).

Other studies point to the social exchange theory or the concept of reciprocity, which emphasise the reciprocal nature of such trade-offs. According to this, 'happy' workers may be very motivated to run 'the extra mile' because they are engaged in their work and committed to their companies. The literature suggests that intensive work can lead to 'extra-role behaviour' by employees, in return for certain benefits. Karasek's job demand-control model found robust evidence over the years for the theory that 'active jobs'—demanding jobs that involve making decision-making—combine intensive work with high quality work, assuming that employees are both content and productive. Decision latitude is beneficial to one's health, and probably to one's work–life balance (Eeckelaert et al, 2012; Häuser et al, 2010).

Working time, work–life balance and gender

According to an expert forecast on psychosocial risks (Brun and Milczarek, 2007), poor work–life balance is one of the top five emerging risks, in particular for women and single households. Irregular working hours and lack of autonomy strengthen this risk. The same expert forecast notes that working time has become increasingly diversified among workers. In particular irregular working hours that are not adjusted to the workers' needs lead to poor work–life balance. An overview of risks and trends in the safety and health of women at work (Schneider, 2011) states that women are more and more concentrated in part-time and casual jobs and are more at risk with regard to low job control and less representation in decision-making (see also Eurofound, 2011). Occupational segregation continues to exist and means that women still work mainly in services, while men work mainly in construction, transport and manufacturing. Men work mainly in male dominated jobs, while women are more likely to work in mixed jobs (Schneider, 2011).

Analyses of the European Working Conditions Survey (EWCS)

Eurofound carried out secondary analysis on the EWCS (2010) to study the relationship between working time flexibility and health and work–life balance. In the EWCS, workers reported on whether their working hours fit with their family or social commitments and whether their work affected their health. The data show that having variable working hours was related to difficulties with balancing work and other aspects of life. The proportion of workers in the retail sector reporting a negative impact of work on health was lower than average and lower than that found in manufacturing. In manufacturing the share of workers reporting a negative impact of work on health is higher among those working shifts (and higher again if their shifts are rotating), those who work on call and those working a different number of days every week.

After controlling for characteristics of work, those working irregular working hours are more likely to have problems with their work–life balance. However, only 25% of workers whose working time arrangements are variable complain about their work–life balance. The negative effect of working rotating shifts is less pronounced in retail. In manufacturing, working the same number of hours every day is positively related with work–life balance, while a negative relationship is found regarding working shifts. Overall, having control over working hours decreases the likelihood of having a bad work–life balance.

The same data show that, in general, regular working hours are not related to a self-reported negative impact of work on health, whereas a relationship does seem to occur between this and on-call and shift work. Worker influence over working time generally diminishes the negative impact of work on health. These results show that it is important to understand more about actual practices with regard to working time flexibility and worker’s influence in order to interpret relationships there. It seems that the same forms of working time flexibility can have different impacts, depending on the sector or the job.

Implications for health, work–life balance and other employee outcomes

Employee orientation in the (new) working time arrangements

In the five case companies, working time arrangements are not implemented with the primary goal of improving workers’ health or work–life balance. This does not mean that these issues are not important for the case companies. Moreover, both employers and employee representatives from the various companies have agreed that flexibility measures have had a positive impact of on work–life balance or health, or both. Through negotiation, management and unions have made these flexible working time arrangements as employee-friendly as possible, and several protective rules and different forms of employee influence over their working hours were developed. Moreover, some employee-oriented forms of working time flexibility are in place, such as regular part-time work and adjusted working hours for specific target groups.

The unions stated that the new working arrangements should improve work–life balance. HR managers in several companies noted that this was one of the aims. At Colruyt, the new collective agreement was intended to better meet the needs of an increasingly feminised workforce. This involved creating more tailor-made employment contracts and greater transparency in the system.

Text box 30: Work–life balance important in negotiations on new collective agreements at Colruyt

Colruyt needed to respond to changes in its workforce. The company used to employ mainly male workers, but with its growth more women and younger workers joined the company. The management believes that respecting employees’ wishes leads to higher motivated and more productive personnel. The unions requested that work–life balance remain central in the new rules on working hours. Both management and the unions wanted to guarantee that all employees, including also the younger and female workers, could have a good work–life balance. The management found it necessary to create greater transparency with regard to the working time preferences of employees and to guarantee that requests for flexibility from workers would be made on a voluntary basis. This fits in with the overall personnel strategy of the company, which is directed towards long-term employment relationships with job security, income security, career development and tailor-made employment relations.

At V&D, the unions made a big effort to create less flexibility and more security with regard to working hours. A result of this was one additional fixed day off for part-time employees and the intention to respect demands regarding fixed days off for flexible contracts. HR management at V&D is exploring ways to meet future shortages on the labour market.

However, tension exists between the aim of remaining an attractive employer and the company's cost strategy, as described earlier.

Text box 31: Work–life balance important in collective agreement negotiations at V&D

The unions at V&D wanted to improve the work–life balance of employees, by reducing flexibility in their working hours. In this aim, they succeeded in limiting the bandwidth of the working time account and in the provision of fixed days off. These are seen as important measures in creating a better work–life balance for workers.

At V&D, social partners agreed to work on the sustainability of the employment relation, on individual learning and career opportunities, on worker vitality and on labour participation. This is not reflected in the current arrangement, but will be discussed in future negotiations. The HR manager expects to face future problems in the labour market due to an ageing workforce. It will be more difficult for employers to attract new employees.

In the three automotive companies, employee demands were met in the new collective agreements. Management and employee representation in all three companies were willing to compromise in order to combine more flexibility with different aspects of security.

At Nido, a compromise was reached with regard to compensation for mandatory days off.

Text box 32: Flexibility and security in Nido

The working time account at Nido was introduced in order to respond to the highly seasonal demands for its products. It is not intended to improve health or work–life balance. However, management and the works council did aim for a win-win situation in their negotiations on the new time banking system. A compromise was reached, in particular with regard to limits on minimum and maximum working hours, mandatory holidays, the notification time for changes in the length of the working day and additional compensation.

At Audi, the most important aim of the long-term working time account and the adjusted work schedules was to guarantee job security for permanent employees. This shows that during the negotiations, health and work–life balance were less important than other outcomes.

Text box 33: Flexibility and security at Audi

The main aim of the working time arrangement at Audi is not related to health or work–life balance. In a low-wage country with a high unemployment rate such as Hungary, job protection is a key factor both for the employee and the employer side, especially during the crisis. The Audi management chose to change work schedules, to introduce long-term working time accounts, to keep salaries at existing levels and to guarantee job protection for three years. This was supported by the union and works council, which also prioritised protecting jobs.

Both Hungarian automotive companies faced being negatively affected by the economic crisis and took measures to guarantee jobs for permanent employees. This ensured the company would keep its qualified personnel. For employees, it was important to keep their jobs; being dismissed have affected their health in a negative way. In addition, Cabtec introduced a special health care programme for workers, with the aim of preventing health problems caused by the crisis.

Text box 34: Health care programme at CabTec

During the crisis, CabTec decided to introduce a special health care programme. Its main aim was to reduce stress that might result from the crisis. Now its purpose is to reduce absenteeism and working accidents. The following steps have been made:

- Informative leaflets have been made available that address topics relating to healthcare and environmental protection;
- Every month a ‘fruit day’ is held, when all the employees have free access to healthy fruit provided;
- The company covers the cost of the influenza vaccine;
- The company runs a ‘Stop Smoking Programme’;
- The food and drink vending machines provide only healthy food and drinks;
- Both the canteen and an open-air smoking area were renovated and made more comfortable so that staff could enjoy their breaks.

Working time flexibility, health and work–life balance, and other employee outcomes

Although improving health was not the primary goal of the flexible working time arrangements, we can elaborate on the possible relationship between the actual (flexible) working hours and health outcomes in the case companies, from what we know on the basis of the literature. It tells us that the most negative impact on health are to be found in round-the-clock shifts with night work and extreme long working days/weeks.

Around-the-clock shifts occur in the fully automated production line at Audi, but these are regular shifts and not part of this study on working time flexibility. Apart from these shifts, night work does not take place in any of these case companies.

Long working hours also pose a risk to health. Again, none of the workers of these companies had basic contracts involving more than 40 hours per week. However, as all companies have working time accounts, the actual length of the working week can exceed 40 hours. The actual length of a working day can also exceed eight hours.

In the automotive companies, working hours are less flexible and collective deviations from the average working day only occur for short periods of time. At Nido, employees will work 45 hour working weeks (five nine-hour shift) during high season, which runs from September to December. At CabTec, the compressed working week of four ten-hour shifts was active for three months but did not lead to a higher average working week. Since these longer working days (or working weeks) are part of a working time account, employees can receive compensation within weeks or months. Of course, long working days can have a negative impact on health and work–life balance, as employees will have less time for their private life.

The text box below shows the link found between the flexible working time arrangements at Nido and CabTec and some negative health outcomes, such as sickness absenteeism and fatigue.

Text box 35: Working time account and sickness-related absenteeism at Nido and CabTec

The general rate of sickness-related absenteeism at Nido is low and has declined from 5.6% in 2008 to 3.1% in 2011. The figures show fluctuation occurs within a year, with the lowest percentages in October–November and the highest at the beginning of the low season, in January. HR management relates the fluctuations during the year to the working time account. It observes an increase in sickness-related absenteeism at the beginning of the low season, when people can relax. This suggests that workers are motivated to work and do not intend to call in sick during peak periods.

At Cabtec, workers became more tired during the three-month period during the crisis, when they were required to work 10 hour working days. This did not affect their productivity however. On the contrary, their loyalty and commitment to the firm led to higher level of productivity. During this period, workers' work–life balance was negatively affected, as they had less free time. However this was compensated by the fact that Friday was a day off.

In both retail companies, working hours vary much more than they do in the automotive companies. At Colruyt, they ranged between three and 11 hours, while at V&D they ranged between three and 12 hours. Employees did not report long working hours as a problem. This might be due to the fact that the working time account means they can recuperate overtime hours in the future. It might also relate to the fact that these hours compare favourably with other retail companies.

Neither did workers report negative health outcomes due to unpredictable working hours. Employees accepted the variability of their working hours, which they felt 'come with a job in retail'. They also felt that they had sufficient control over their working hours. Overall, a strong link did not emerge between flexible working hours and negative health outcomes. Both management and employees pointed to other aspects of the job, which they felt were more demanding than working hours, such as physical, psychosocial and environmental job demands. Health and safety management focuses mainly on physical and environmental job demands.

Text box 36: Working hours and other job demands at Colruyt and Nido

Both unions and management at Colruyt state that health problems may be connected to working conditions, but not to working hours. The main risks in the supermarket are related to physical and environmental demands (e.g. working in cold areas). If any change can be reported in the relationship between working hours and health, it is that the new working hours have led to changes in the work processes and the need to work more efficiently. The company sees job rotation as one of the tools to cope with physical job demands; another is the ergonomic measures taken with regard to the cash registers.

A health survey carried out at Nido revealed that the main risks in the production department are physical demands (leading to bad postures), safety risks (personal protection) and overweight. The company has begun several projects on these topics. The interviewed employees did not see a relationship between working hours and health. At Nido, working hours vary only to a limited degree: working days are either from 7.30 to 16.15 or from 7.00 to 16.45. Several workers compared their current job with their experiences in the agricultural sector and found that they are much better off at Nido.

Positive relationship between flexible working hours and work–life balance

Both employees and management in the case companies feel that the new working time arrangements have improved the work–life balance of the employees. Key factors are the higher level of predictability of working hours, the influence employees have on their working hours and tailor-made employment relations.

Although all employees understand the need for flexible working hours, they do value predictability in their working hours and work schedules. Several collective labour agreements contain rules that provide more security and predictability for employees; examples include a longer period of notification for future work schedules or regarding mandatory days off, and having a certain number of fixed days off.

For employees in the automotive sector, predictability relates to advance notification of collective closures and changes in production numbers. It also relates to being able to plan and take time off. For employees in the retail companies, predictability relates to the notification period for future weekly work schedules, and being able to plan and take time off advance.

Text box 37: Employee influence and work–life balance at Colruyt

One of the explicit intentions of the new rules at Colruyt was to guarantee work–life balance for the employees. It is difficult to combine work and family life with very changeable working hours. However, employees of this supermarket do not feel that their variable hours have a negative impact on their work–life balance. The way in which working hours are implemented helps workers to combine their work and family life. The most important factors are: the negotiability of working hours, employees' influence over them, the three-week notification period for weekly work schedules, the compensation system for overtime and the considerable opportunities to take time off when needed. Another factor is that overtime is now monitored quite closely and controlled by the manager. The Belgian childcare system is also relevant – in some regions childcare centres are quite flexible about which days children are brought to the facility.

It is also important for employees that they can negotiate on an individual level about their specific needs with regard to working hours. Most importantly for a positive relationship with regard to health and work–life balance is the fact that the manager respects individual needs and allows employees to formulate them; managers that are less competent in this respect are not appreciated and will pose problems for work–life balance. The day-to-day option of changing shifts with colleagues or to take time off when needed is a prerequisite for being able to combine work with private life.

Text box 38: Employee influence and work–life balance at V&D

Employees at the V&D department store indicate that they do not have a problem with variable working hours. They appreciate what they call 'informal flexibility', which means that they can change their working hours or exchange hours with colleagues, in consultation with their floor manager, whenever they need to do so. They also appreciate the fixed day off that is agreed in the new collective labour agreement. They confirm that this provides them with more security and better work–life balance.

According to employee interviewees, employee satisfaction is dependent on the quality of the floor manager: sometimes they are late in notifying staff of future work schedules. Employees highly appreciate the store manager's transparency with regard to the targets that are set by corporate management. Employees tend to be more flexible when they understand the company's need for this and when this need is communicated properly.

Finally, employee-oriented forms of working time flexibility positively affect work–life balance. Examples here include allowing employees to work part-time on a regular basis, or to work in special shifts, when needed. These arrangements can be changed by the employee at any time, in dialogue with their manager.

Text box 39: Special shifts for working mothers at CabTec

The works council representative at CabTec emphasised the importance of the special shift for female workers with young children, as it helps mothers improve their work–life balance. This shift gives them time take their children to childcare or primary school in the morning and to pick them up before 17.00, the usual closing time of schools and childcare centres. Employers also saw the positive effect of this on everyday working life. They believe that the workers can work more effectively as they no longer have to worry about this issue.

Other employee outcomes

The most obvious other employee outcome is the guaranteed job security for permanent workers at the two Hungarian automotive companies.

Text box 40: Job security at Audi

The aim of the working time arrangement at Audi was not to improve health or work–life balance, but to protect jobs. However, the fact that the company management guaranteed it would protect the jobs of full-time core workers up to the end of 2011 had a positive effect on health and work–life balance. During the stressful time of the crisis, especially in 2009 when production fell back, this management strategy gave stability and security to employees, which had a positive influence on their health.

Long-term employment at Colruyt creates the opportunity for career development; this can be seen as another positive outcome. When companies choose to focus on improving internal labour flexibility, employees get the chance to develop skills.

Negative indirect effects of working time flexibility

A strong focus on productivity within a company may lead to more concentrated work, which in turn can lead to greater pressure on employees and even negative health outcomes. Companies such as Nido and Colruyt aim at increasing the internal flexibility of workers, with a view to making jobs both more challenging and more secure, as well as increasing productivity. They combine flexible working hours with functional flexibility. Employees at Nido feel functional flexibility can pose risks, with functionally flexible employees continuously dealing with big workloads and being put in places where the work load is high. At V&D, pressure on top management to reduce costs means that the local manager has to balance this concern against the needs of staff.

Text box 41: Internal flexibility and job intensification

Nido employees described how pressure has increased due to an increased emphasis on productivity and functional flexibility: permanent employees can no longer relax during low season and have some scruples in asking for time off. It is important that these workers can discuss this with their manager and are taken seriously on this issue.

Drivers for working time flexibility and factors that have a positive effect on both productivity and working conditions

Legislation and practice regarding working hours

Although the European Commission and European Parliament have a large stake in labour law and regulations, Member States' national legislation still plays a much stronger role here. Collective bargaining on the length of working time in the EU Member States takes place within the statutory rules on maximum working hours. These must, as a minimum, respect the provisions of the EU Directive on certain aspects of the organisation of working time (2003/88/EC). These include a 48-hour maximum working week (over an average reference period not exceeding four months), a minimum daily rest period of 11 hours and a daily working hour limit of eight hours for night workers. The statutory maximum working week (for 2009) in Hungary is set at 48 hours. The statutory maximum working week in the Netherlands is also set at 48 hours, as an average calculated across 16 weeks; this includes overtime. For Belgium the statutory normal working week is set at an average of 38 hours; a maximum of 50 hours work includes overtime. The statutory maximum working day (with no night work) is 12 hours for Hungary and the Netherlands (including overtime) and an average of eight hours for Belgium (with a maximum of 11 hours when working overtime).

The fact that 11 or 12 hour working days and 48 hour working weeks are allowed does not mean that such working hours are the norm. The collectively agreed weekly working week in Hungary in 2009 was 40 hours, in Belgium 37.6 hours and in the Netherlands 38.6 hours (Eurofound, 2010). In the case companies, the normal average working week for full-time employees ranges from 35 to 40 hours per week and the normal working day for permanent employees ranges from four to 10 hours. Hungary clearly demonstrates a high prevalence of the 40-hour norm; more than 80% of all employees in Hungary usually work 40-hour weeks; this is found among male and female workers (Plantenga & Remery, 2009).

Part-time employment in the case study countries

National rates of part-time employment reflect differences in the labour markets of the three case study countries. In Hungary, the rate of part-time work is low: 2.6% for men and 5.6% for women (Eurofound, 2009). This is despite legislation dating back to 1991 which allows subsidies to be given for part-time employment, as well as other incentives. For example, since 2004 employers who offer part-time employment to parents on childcare leave (who are not allowed to work full-time) are exempt from healthcare payments. Likewise, since 2005 health insurance contributions have been adjusted to make them proportional to hours worked. In Hungary, employees with a child aged under one year (or single parents with a child aged under four years) can only be assigned to work outside their scheduled working hours with their consent (Plantenga & Remery, 2009).

In Belgium, 41.1% of women, but only 7.4% of men work part-time (Eurofound, 2009). In this country, part-time work is encouraged through career breaks. These were introduced in 1985, partly in order to provide job opportunities for unemployed people, but are now more often considered as a means of improving work–life balance. A generalised ‘time credit’ system is widely used to enable women aged under 50 years to take career breaks, with men over 50 years also making use of this option to reduce working hours.

In the Netherlands, part-time work has increased over the years, this country has by far the highest proportion of part-time employees in the EU: 74.7% of women and 23% of men. Until 2002, the government promoted part-time work, particularly for women, by supporting childcare initiatives. It also encouraged part-time work for students as a way of financing their studies. Since 2003, however, the government has begun to discourage part-time work because of concerns about labour shortages. Despite this, the Law on Adaptation of Working Hours (2003) provides for the right to

part-time work for individual employees. Some employees are reluctant to file a request to work part-time at their local management.

The five case companies reflect their national contexts with regard to part-time work. Both Dutch companies allow employees to work part-time on a regular and voluntary basis. At V&D, the proportion of women workers is much higher than in the other companies; this has led to a higher proportion of part-time employees. At Nido, most workers in the production department are men and part-time work is not that common. It is, however, allowed in production units, which is not common to this sector. In Hungary, where it is not common to work part-time, CabTec allows women with small children to adapt their working hours. Most employees at CabTec and Audi work full-time. Colruyt has seen an increase in the female workforce and a corresponding increase in part-time workers. However, the main strategy of this company is to give employees the possibility of working full-time and managing their work–life balance through working time flexibility.

Childcare facilities in the case study countries

In Belgium, childcare provision is quite flexible, regarding the days people choose to avail of their centre. In the Netherlands, it is very difficult to change childcare arrangements; usually these are set years in advance. This is one of the reasons why the unions at V&D negotiated so hard for fixed days off. In Hungary, adjusted working hours for women with young children are set so that they can bring them to school or childcare, and pick them up before closing time.

Sector and market demands

All case companies operate in a highly competitive environment. On top of this, the economic crisis has influenced the way in which working time flexibility is negotiated within all studied companies. All companies have been forced to cut budgets, to investigate new ways of improving productivity and to formulate new competition policies.

The study's focus was on employees in the production departments of the automotive companies and at the shop floor in retail companies. In these contexts, working hours are strongly determined by the work processes and are mainly employer-oriented.

Demands on the retail sector Both Colruyt and V&D feel the impact of the economic crisis: their customers spend less money. Both companies also feel the competition from internet shopping. Colruyt has developed an online presence in recent years, selling supermarket and wholesale goods online. Both companies feel the need to cut costs; working time flexibility is implemented with a view to maximising efficiency in staffing. V&D struggles to combine a cost-driven strategy, involving an increased level of flexible, long-term contracts, with a focus on quality. At Colruyt, continuous improvement of work processes and functionally flexible personnel helps to keep costs as low as possible.

In retail, the amount of work that needs to be done is directly linked to the number of customers or sales per week, day or hour. This means that both companies use highly flexible and individual work schedules in order to follow sales per hour as closely as possible and within the limits of the store's opening hours. Only a limited amount of work needs to be done before opening time or after closing time. Working hours are very flexible and vary per day or week.

Demands on the automotive sector

Many automotive industry suppliers such as CabTec and Audi were affected by the financial crisis in 2008. Some of them, like CabTec, realised the importance of rearranging their working time strategy before the crisis occurred. The crisis negatively affected production at CabTec in the second quarter of 2009. However, although there was some decline in sales, the company was able to handle the new situation and successfully adapted to the modified market circumstances. The implementation of flexible working time arrangements was a key factor in doing so.

Large car manufacturers were motivated to find cheap, productive and skilled workers in Hungary, as well as easy access to local, fast-growing markets. As a consequence, manufacturing became highly important in Central Eastern Europe. Nearly all the major car factories were taken over by multinational corporations and they survived the stormy economic context of the regime change in the early 1990s. In Hungary, General Motors appeared first, beginning production in Szentgotthárd in 1992. One year later Suzuki's second European factory opened in Esztergom. The Hungarian subsidiary of Audi begun producing parts and engines in 1993, and car assembly in 1998. Audi is now in the midst of a major new investment. The latest large-scale (green field) automotive investment is that of the Daimler (Mercedes) production facility in Kecskemét.

Besides these original equipment manufacturers, several first level integrator suppliers are also present in Hungary, like Denso, Knorr-Bremse, Alcoa, Webasto, Bosch, Michelin and Bridgestone. Most of these also subcontract to local second or third-tier suppliers. Elcoteq became the main multi-national (MNC) undertaking in Hungary; it mostly employs low-skilled workers and has few domestic suppliers. The potentially ambiguous impact of these MNCs on the local labour market can be seen in the fact that lower labour costs were significant factors in attracting them (and their local supply chains) to Hungary. However, once they have made their investments in the country, power relations can shift, and the bargaining capacity of national suppliers and national labour may improve (Jefferys, 2012).

Nido in the Netherlands is less influenced by the economic crisis as its main customers are municipalities. As in all manufacturing companies, a continuous increase in productivity is important in order to remain competitive. Working time flexibility is mainly necessary to cope with the highly cyclical production.

Work processes in the automotive sector are usually partly or fully automated. Workers at the production lines need to work in regular shifts in order to keep the production line operating. This means that work schedules in this sector are more fixed than those found in retail. These companies have one-shift, two-shift, three-shift and even five-shift systems, depending on the number of products and the type of production line. (A five-shift system provides labour 24 hours a day.)

Local context and labour market demands

The local labour market is an important contextual factor, because it affects the relationship between employers and employees. In a crisis situation, employers often have a stronger position.

For Colruyt, V&D and Nido, management has shown a willingness to meet the demands of the unions and works council, as long as stays within the boundaries set by the company.

For Nido, negotiations take place at local level. The unemployment rate in its region is low, at approximately 3%. Nido is located at an industrial area in a small town. Agriculture and tourism are the main economic activities of the area. There are several other large (agriculture and transport related) companies in the area. These companies provide sufficient employment for the younger generations of farmers.

Negotiations within Colruyt and V&D take place at national level. This means that for the collective agreement, the strong position of the national unions is more important than the local labour market. However, the local situation was the point of reference for employees of the case studies. The unemployment rate in the region of the V&D store is approximately 5.5%. This store is located in a city where the labour market is dominated by private services, creative business and tourism. The unemployment in the region of the Colruyt store is high (over 10%).

The unemployment rate in Hungary is also over 10%. There, the impact of the crisis on the local economy and the labour market formed the background for negotiations on job security: employers and employees worked together to save jobs

for the core permanent workforce. As we have seen, this was not the case for workers on a flexible contract or for subcontractors. Protecting business was felt to be the most important outcome of the working time flexibility measures in both Hungarian case companies. Both of these case companies were lucky to be part of an MNC that wanted and was in a position to invest in the future of the company.

Colruyt is a profitable company that considers the long-term interests of workers. This case makes it clear that Colruyt needs to negotiate change if it is to stay in a strong position. Both Belgian labour law and the strong role of the unions play a role in keeping Colruyt on track, both as a social employer and by finding ways to remain competitive. Both Colruyt and Nido see sustainability and social responsibility as core elements of their business. For V&D the ageing workforce and future shortages on the labour market provide a rationale for developing an agreement regarding the sustainability of employment relations. This is not reflected in the current collective labour agreement, but will form part of future negotiations.

The situation in Hungary was completely different; for Audi and CabTec, the unavailability of trained workers in their local labour markets forced them to look for ways to retain skilled workers they themselves had trained.

Internal factors influencing working time flexibility, and its beneficial effect on productivity and working conditions

The above mentioned external factors describe the context in which the case companies have implemented flexible working time arrangements. These factors do not explain how the companies are able to improve working conditions and productivity at the same time. Some internal factors in the case companies contributed to the achievement of both high productivity and good working conditions, which involved a continuous process of change and (re)negotiation. They were: good employment relations between employer and employee, a professional approach towards negotiation, professional human resources management supported by transparent information technology, and a coherent flexibility strategy.

A professional approach to negotiation

Three factors are important in developing good employment relations: dialogue, trust and reciprocity.

Dialogue: Dialogue is important. A top-down approach will not encourage support from workers for change and renewal. Constructive dialogue requires meaningful representation from employees and HR. At all five companies, the employee representatives could negotiate with management and were taken seriously in their role.

Trust: All partners know that each has their own 'agenda'. This is not a problem as long as each party respects each other's points of view and interests. Therefore, trust is a second condition of mature employment relations. Trust can only exist if parties are prepared to talk about their 'agenda'. Trust must be earned: it comes by foot but leaves on horseback, as a Dutch saying goes. In the example of Colruyt, the assurance that the company did not intend to open more stores on Sunday created the trust necessary to extend opening hours in the morning and on Saturday before the negotiations ended. At Audi and CabTec, trust was gained by the presence of a common goal (protecting the core worker's jobs). Defining the scope and boundaries of the debate is also important for creating trust. Trust is not only important among negotiating parties; it is also important between managers and employees. Clarity regarding the company's strategy is important in this respect. Employees need to understand the reasons behind the company-oriented working time flexibility and at the same time trust their managers in respecting the employee demands.

Reciprocity: If a person receives something that meets or exceeds their expectations, they will feel motivated, if not obliged, to reciprocate. Reciprocity implies being prepared to ‘negotiate’, ‘check’ and ‘correct’ whenever this is required. Only in this context will workers and employers be prepared to start working together while respecting each other’s interests. Within Colruyt, good employment relations are enhanced by the fact that any infringement of rules with respect to working hours at local stores is dealt with by HR at head office.

Professional HR management and transparent information technology

Arrangements that are agreed through the negotiation process need to be implemented and carried out by local management, in dialogue with their employees. This means that the capacity of local managers plays an important role in the success of the arrangement. Companies such as Colruyt and V&D focus on training managers in order to improve their competences. But managers are also supported by professional management information systems. There are several examples in which working time flexibility is supported by new or improved management information systems. These systems support the transparency of the implementation process. Managers are supported with their staffing and planning. Employees are enabled to influence their own working hours. At Colruyt, features such as personalised feedback and the points system for recording time worked are important. The personal forms that are filled in by the employees support the voluntary nature of the system, and the points system provides employees with control over their working hours. At V&D, planning comprises the main means of optimising personnel costs and the planning tool is required for matching personal interests with company goals. In the case companies, the development of these systems is an ongoing process. The process of providing feedback to employees is a work-in-progress.

Another aspect of HR policy in the case companies is the fact that they carry out employee surveys and workplace interventions in order to improve general working conditions.

Coherent flexibility strategy

The cases show that the success of working time flexibility is highly dependent on the mixture of flexibility measures offered; on its own, it does not have the same impact in all settings. The broader contexts is an important factor in understanding how a balance is reached. Companies need to know how to react to their environment with different kinds of measures. These case companies combine working time flexibility with functional flexibility, flexible work processes and technology, but also with flexible contracts.

In more traditional settings, workers need to adapt to the work setting and to company-oriented flexibility. The case studies show different ways in which companies try to adapt the work setting better to the employee perspective. Higher flexibility from employees can be earned by an adapted personnel policy, by creating stable and secure jobs or by a smart use of incentives, such as an adaptation of payment systems.

Summary and conclusions

The central research question of this research is: how have certain companies been able to implement flexible working time arrangements in a way that they have positive effects on productivity and at the same time improve working conditions, in particular health and work–life balance? This section presents a summary of the findings of this study and draws some conclusions with regard to this research question.

Working time flexibility

The research literature describes the concepts of *employer- and employee-oriented flexibility*. It suggests that some specific arrangements are mainly employer-oriented and other arrangements are mainly employee-oriented. The case studies presented here show that, in practice, the two concepts can be combined.

It might be concluded that the case companies have mainly implemented employer-oriented forms of working time flexibility, since the working time arrangements are primarily introduced to ‘bring human capital in line with the temporal requirements following from business, e.g., times of customer demands, machine running times, optimal utilisation of capital invested’ (Gareis & Korte, 2002). This is particularly the case for different working time accounts, variable working hours and shift systems and for work outside office hours, but is also relevant to the compressed working week.

Employee-oriented forms of working time flexibility are ‘those that provide workers with the freedom to adapt their working hours and schedule to meet their own personal and family needs’ (Chung, 2011). No examples were found of employees being able to totally adapt their working hours to their own personal needs. This is mainly due to the choice of sectors and departments. There are examples of flexitime for office workers in these companies, but this was not the focus of the study. However, there are examples of employees being able to adapt their working hours to a certain extent. Examples include regular part-time work and some tailor-made employment relationships. This is also enabled through tools such as the wish book. In both retail companies (with a higher level of female workers and more individual rosters), employees can influence their daily rosters. They can also use the wish book to better align work and family life. In the automotive companies, with its focus on regular and collective rosters, employees cannot formulate many wishes with regard to variable working hours, but they can influence the days they take off. In addition, as the example of CabTec shows, separate shifts can be organised for groups of workers (e.g. women with small children).

It would not do the case companies justice to describe flexible working time arrangements as only being employer-oriented. Due to the influence of employee representatives on the collective agreements, and of individual employees on their daily work schedules, the flexible working time arrangements can be qualified as company-oriented and employee-friendly, insofar as market demands allow. All kinds of workers can benefit from this, due to the tailor-made arrangements.

One remark can be made. As flexible working hours can be characterised as a form of internal flexibility, the cases show that the practices are most employee-friendly for permanent employees. Employees with a fixed-term contract have less influence on their working hours and are less secure in their jobs.

Relationship between working time flexibility and productivity

On the basis of the literature, it is difficult to come to a conclusion about the impact of working time flexibility on productivity. In the sectors and departments of our case companies, company-oriented forms of flexible working time are an important part of the company strategy on productivity. This is particularly the case for working time accounts and variable working hours, but also applies to compressed working weeks. These flexible working time arrangements are directly and positively linked to increasing levels of productivity; this outcome is achieved through a better alignment between the number of hours worked and the demand for labour.

The exact impact of working time flexibility on productivity is hard to estimate and probably not that high, when compared to other measures. The highest impact on productivity is expected to be achieved through combining working time flexibility with other flexibility measures, alongside other measures, described below.

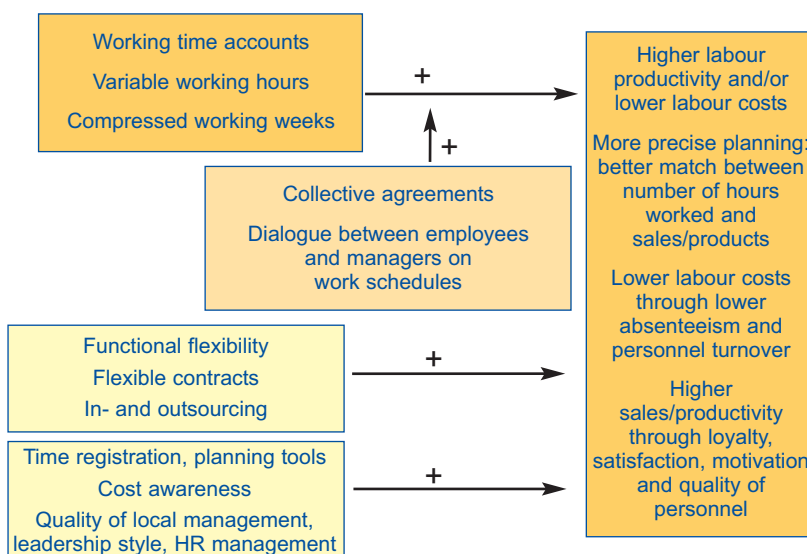
The case studies also highlight some possible indirect links between the implementation of flexible working time arrangements and productivity. Additional measures such as better management information systems and improved work processes stimulate a positive relationship. The fact that flexible working hours are negotiated was also found to improve the relationship between working time flexibility and productivity.

Several internal factors facilitate a positive relationship between working time flexibility and productivity. One is the capacity of local management, especially regarding dialogue, trust and reciprocity. Both retail companies, having highly flexible work schedules, cited the importance of people-oriented managers with good training and planning skills in creating a the give-and-take situation that supports high labour productivity. Interviewees spoke of past managers (or ones from other departments) who could not communicate effectively with employees about work schedules or who made ‘a mess out of the work planning’. This was linked to a decrease in motivation and employees not being able to ‘make an effort’ when needed, thus negatively influencing productivity. Polarised or conflicting labour relations at a department will have a bad influence on productivity, but also on quality, resulting in more mistakes being made, a lower level of service and lower sales.

Company performance is not only influenced by the company itself. There are also several external factors that can have a positive or negative influence on either input (labour costs, costs for materials) or output (sales). The main external factors are: the economic situation; labour market conditions and related social legislation; the changing customer demands; and competition. These factors force the case companies to formulate a thorough response to them in their personnel strategy.

Figure 3 shows the relationship between working time flexibility and productivity, including other variables that were found to be of importance.

Figure 3: Link between working time flexibility and productivity in the case companies



External factors: economic crisis, competition, changing customer demands

Relationship between working time flexibility and working conditions

Both the literature review and the secondary data analysis highlight the difficulty of pinpointing specific flexible working time arrangements that have a positive or negative impact on health or work–life balance. Some working relationships have a positive impact, while others have a negative one. Specific elements of these arrangements can be assumed to be linked to such positive or negative outcomes.

One might expect that a high level of variability in working hours, without any predictability or employee influence on these hours will have a negative impact on health and work–life balance. In addition, long working hours without the right to receive compensation for overtime in the short-term (within weeks or months) has a negative impact on health and work–life balance.

When worker’s preferences are taken into account in preparing work rosters, this is found to have a positive impact on work–life balance and health. This is also the case when opportunities exist for developing individualised employment relations.

Several internal factors facilitate a positive relationship between working hours and health and work–life balance: continuous formal and informal dialogue; the use of management information that is transparent for both managers and employees (in order to keep track of their own working hours); and the skills of local managers (in conducting a proper dialogue with employees and in planning work schedules in a such a way that all employees have equal opportunities). Health and safety management is also important; this helps to address any negative side-effects of increasing flexibility (either in terms of working time or functional flexibility).

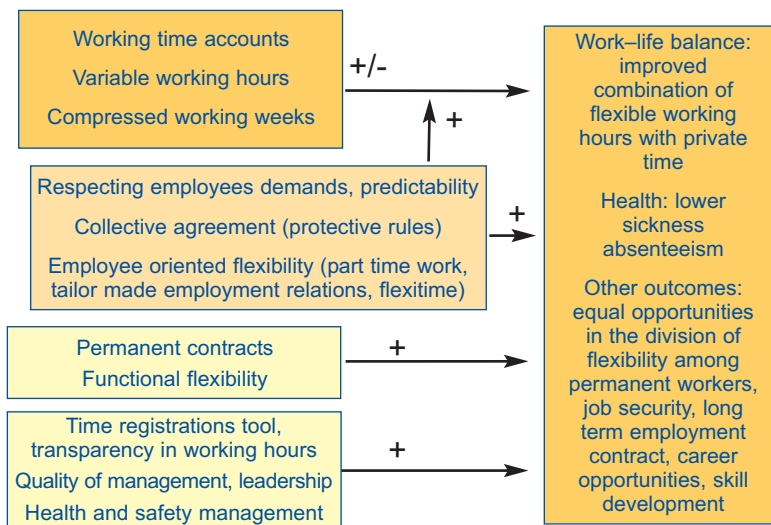
External factors that facilitate, or put pressure, on this relationship can be found in the local context, the short-term and long-term characteristics of the labour market, national legislation and the child care system.

From the case studies it became clear that health-related outcomes were not a key consideration when flexible working time arrangements were negotiated. However, even when working time flexibility is mainly employer-oriented, there is always room for negotiations that improve the situation of the employees. Although it is difficult to directly link sickness-related absenteeism to the change in working time arrangements, case company respondents believe that the working time arrangement and the way in which it is implemented does have a positive effect on health. We could not draw definite conclusions on the basis of the figures on absenteeism. This is because other factors can play a role here, such as ergonomic measures, new managers and the economic crisis. However, respondents believe that employees’ health will be improved due to greater satisfaction among them and a better work–life balance as a result of the new working time arrangement.

The case studies show that when employee representatives are negotiating working time, several working conditions are considered more important than health; one example is job security. Improving work–life balance was part of the negotiations, in particular in retail where the proportion of female workers was higher than in the automotive companies.

Figure 4 shows the second part of the research model on the basis of the case studies.

Figure 4: Link between working time flexibility, work–life balance and health in the case companies



External factors: local labour market, economy, childcare system, national legislation

Factors positively influencing productivity and working conditions

Flexible working time arrangements are implemented as a response to several external drivers and within a specific context. External or contextual factors can be found at various levels in society. These include: national legislation and the institutional context with regard to working time legislation, including the rate of part-time employment and childcare systems; sector and market demands; and the local context with regard to unemployment rates and local labour markets. These external factors can be seen as drivers for the implementation of working time flexibility that will have a positive influence on either working conditions (national legislation, institutional context, local labour market) or productivity (sector and market demands).

One of the main goals of this study was to identify those factors that facilitate flexible working time arrangements to have a positive impact on both productivity and working conditions. All the case companies aimed for a win-win situation in this regard. However, these companies are not necessarily representative of current practices within the retail or automotive sector. The findings show that achieving this goal is a continuous process of change and (re)negotiation.

The following common factors have a positive effect on both productivity and working conditions. *Respectful dialogue between employees and management on work schedules*: The bottom line is the presence of ‘mature employment relations’ between employer and employee. Such relations contain three characteristics: a two-way dialogue, trust in each other, and reciprocity. They also involve a willingness to negotiate constructively. Such a dialogue takes place both at the level of the collective agreements and at department level. Employees demands are respected, insofar as this is possible. When the company cannot meet all requests, this is communicated clearly to employees.

Time registration, tools, planning tools and transparency: Several of the case companies developed a new system in order to create a more systematic and professional planning system and more transparency in terms of actual working hours. Information technology played a role here. This allows management to make necessary and immediate adjustments to the planning process and to gain the highest productivity. It also provides the employee with the tool to follow their own working hours closely and to gain the best match with their own demands. In particular, in time banking systems it is important to continuously monitor working hours.

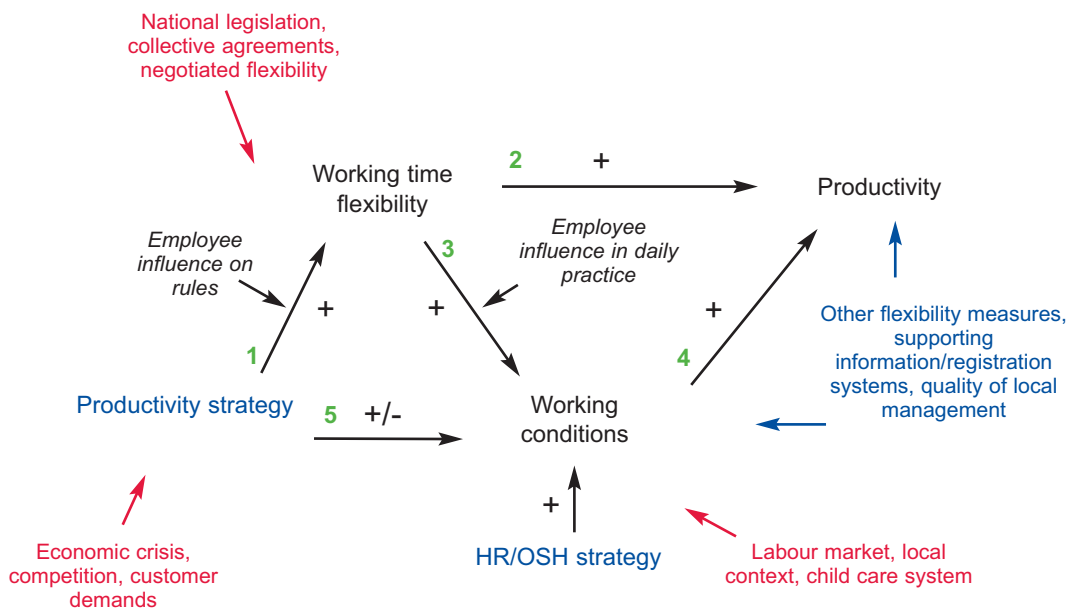
Quality of local management and leadership style. The quality of local management was highlighted as an important factor in many of the case companies. The local manager should have the skills to maintain a good dialogue with employees, as well as the skills to plan working hours as efficiently as possible.

A coherent flexibility strategy: The companies combine working time flexibility with other forms of flexible labour. In particular the combination of working time flexibility with functional flexibility provides the opportunity to increase the productivity of the existing workforce, while also providing this workforce with good working conditions, in particular challenging jobs and opportunities to develop their skills.

Conclusion: a complex relationship between working time flexibility, productivity and working conditions

This research presents a complex, triangular relationship between working time flexibility, productivity and working conditions (see Figure 5).

Figure 5: Triangular relationship between working time flexibility, productivity and working conditions



Working time flexibility is one measure in developing a productivity strategy.

Companies are likely to first (re)define their productivity strategy, and subsequently design their working time arrangement, if working time arrangements are a significant factor in realising their productivity strategy. The characteristics of the sector and the market circumstances are drivers behind this company strategy. National legislation and collective agreements form the framework in which working time flexibility can be negotiated.

By integrating working time flexibility in this productivity strategy, the working time arrangement will, to some extent, make a direct positive contribution to productivity. In these case companies, the impact of working time flexibility on productivity is not high given the range measures that are implemented.

Even though working time flexibility is company-oriented, there is room for negotiation in order to match employee demands. The manner in which the working time flexibility arrangement is implemented, in particular the level of collective influence on its rules, will influence whether it has a positive or negative impact on working conditions.

With regard to working conditions, health-related outcomes are not considered when flexible working hours are negotiated, but work–life balance is. In some cases there are other more important working conditions, such as job security or long-term employment relationships. Individualised employment relations and transparent rules with regard to working time flexibility both stimulate equal opportunities for all permanent workers (men and women). A positive outcome is further supported by the company's HR and occupational safety and health strategies. The local labour market and local context are important factors when assessing employees' working conditions.

The manner in which working time flexibility operates on a daily basis, and in particular the individual influence of employees on their working hours, has an indirect positive impact on productivity. Thus, the new working time arrangement can lead to better a health and work–life balance for employees and more motivated personnel; this will lead to higher productivity. This is further supported by other measures taken together with the implementation of the working time arrangement, such as information technology and quality of local management.

The productivity strategy can also have a direct, negative impact on health and work–life balance, when it leads to other changes in work organisation, except working time. In particular a strong emphasis on productivity increase can lead to more intense work, with negative health outcomes.

These conditions are valid for production and operational departments of for-profit organisations that are confronted with fierce competition during the economic crisis. Even in these circumstances, however, it is possible to implement working time arrangements that are beneficial for both productivity and working conditions. It should also be said that this is not the case for all employees. In particular, employees on a flexible contract or employees working for sub-contractors do not experience the same positive outcomes. Finally, the case studies show that working time arrangements can change over time and be adapted to the need of a changing workforce. They also show that more opportunities for differentiation between employees occur in companies with a higher proportion of female workers. Finally, the relationships described here do not imply that straightforward, causal predictions can be made regarding how such measures would work out in another context, because there are too many factors involved.

European perspective

Existing international labour standards on working time and recent research on working time trends and developments focusing on industrialized countries point to five significant dimensions of decent working time. These are that working time arrangements should: be healthy; be family-friendly; promote gender equality; advance enterprise productivity; and facilitate worker choice and influence over their hours of work (Messenger, 2004). These dimensions reflect the focus of Eurofound's work, which has focused on four key dimensions of quality of work and employment: ensuring career and employment security; maintaining the health and wellbeing of workers; developing skills and competencies; and reconciling work–life balance. A better quality of working life, together with the promotion of employment and entrepreneurship, is also central to the European Union's employment strategy and social policy agenda (EU 2020 Strategy and the Renewed Social Agenda). The case studies show that it is possible to address these dimensions in a competitive environment. The case companies combine several forms of internal flexibility (in particular working time and functional flexibility), thus supporting this strategy. The case study research also shows that reality is far from perfect; this issue takes great effort, and is a continuous process of development, involving real dialogue at company level.

It remains important that the EU policy facilitates companies to balance both goals of productivity and working life balance through flexible working arrangements, for the sake of Europe's welfare and the wellbeing of employees. At company level, this may be seen as an important factor that contributes to a prosperous future. Balancing the interests of employers and employees is key to success. From the perspectives of the European policy debate on flexibility and competitiveness, and the European social model, the case studies prove that it is possible for companies to combine both goals. In this way, at least employee-friendly features can be combined with an employer-oriented flexibility.

One should keep in mind, however, that successful implementation trajectories are always unique, in several ways. This makes it hard for them to be copied by others. The five cases presented here cannot be regarded as models of best or good practice. In any case, they cannot be copied, due to their unique characteristics. Nonetheless, one can learn much from the mechanisms behind their success. How a company might use these mechanisms will depend on the particular process that takes place between employer and employee.

Further research

This study is based on in-depth research in five case companies in two sectors. As noted earlier, their practices in the field of working time are not representative of either sector. This study provides insight into the way in which flexible working time arrangements can be implemented in such a way that is beneficial for both productivity and working conditions. As we have seen, it is difficult to quantify a direct link between working time flexibility and productivity and working conditions, due to the complexity of everyday practice. It is therefore recommended that these findings be used to develop survey questions, so that quantitative research may be carried out on the research question.

The case study research has been very informative. It is also recommended that the research be repeated in other sectors, in order to reach insights into similarities and differences between those sectors and the cases in this research.

The sectors and jobs included in this case study research has led to a focus on employer-oriented working time arrangements, which were implemented in an employee-friendly way. It would be interesting to focus new case research on employee-oriented working time flexibility (such as flexitime), and to explore its impact on productivity.

Bibliography

Åkerstedt, T., and Wright, K.P. (2009), 'Sleep Loss and Fatigue in Shiftwork and Shiftwork Disorder', *Sleep Med Clin*, Vol. 4, No. 2, pp. 257-271.

Blok, M.M. and de Looze, M.P., (2011), 'What is the evidence for less shift work tolerance in older workers?', *Ergonomics*, Vol. 54, No. 3, pp. 221 -232.

Boulin, J-Y., Lallement, M., Messenger, J. and Michon, F. (eds.) (2006), *Decent working time: new trends, new issues*, ILO, Geneva.. Available at:

http://www.ilo.org/global/publications/ilo-bookstore/order-online/books/WCMS_071859/lang--en/index.htm

Brun, E. And Milczarek, M. (2007), *Expert forecast on emerging psychosocial risks related to occupational safety and health*, European Agency for Safety and Health at Work, Bilbao.

Caruso, C.C., Hitchcock, E.M., Dick, R.B., Russo, J.M., and Schimt, J.M. (2004), *Overtime and extended work shifts: Recent findings on illnesses, injuries and health behaviors*, Department of Health and Human Services, National Institute for Occupational Safety and Health (NIOSH), Cincinnati, US. Available at:

<http://www.cdc.gov/niosh/docs/2004-143/>

CEEP, ETUC, UEAPME, UNICE (2008), *Reconciliation of professional, private and family life: Progress report*, [S.l.].

Chung, H. (2011), *The varying company performance outcomes of working-time flexibility practices across 13 sectors in 21 European countries using the European Establishment Survey (2004/2005)*, Paper presented at the Expert meeting, 'Organisation of working-time: implications for productivity', Eurofound, Dublin. Available at:

http://www.eurofound.europa.eu/docs/events/2011/workingtime/chung_paper.pdf

Chung, H., Kerkhofs, M. And Ester, P. (2007), *Working time flexibility in European companies, Establishment Survey on Working Time 2004–2005*, Eurofound, Dublin. Available at:

<http://www.eurofound.europa.eu/publications/htmlfiles/ef0739.htm>

Costa, G., Åkerstedt, T., Nachreiner, F., Frings-Dresen, M., Folkard, S., Gadbois, C., Gartner, J., Grzech-Sukalo, H., Harma, M. and Kandolin, I. (2003), *SAL TSA: As Time Goes by – Flexible Work Times, Health and Well-Being*, National Institute for Working Life, Stockholm.

Dex, S. and Scheibl, F. (1999), Business Performance and Family-Friendly Policies, *Journal of General Management*, Vol. 24, No. 4, pp. 22-37.

Eeckelaert, L., Dhondt, S., Oeij, P., Pot, F., Nicolescu, G.I., Webster, J. and Elsler, D. (forthcoming, 2012), *Review of workplace innovation and its relation with occupational safety and health*, European Agency for Safety and Health at Work, Bilbao.

European Commission (1997), *Partnership for a new organization of work: Green Paper*, Document drawn up on the basis of COM(97) 128 final, Office for Official Publications of the European Communities, Luxembourg, Bulletin of the European Union, 1997, Supplement 4/97.

European Commission (2010), *Study to support an impact assessment on further action at European level regarding Directive 2003/88/EC and the evolution of working time organisation*, Deloitte Consulting, Diegem.

European Commission (2007), *Towards Common Principles of Flexicurity: More and better jobs through flexibility and security*, Office for Official Publications of the European Communities, Luxembourg.

Eurofound (2009), *Comparative analysis of working time in the European Union*, Dublin. Available at: <http://www.eurofound.europa.eu/ewco/studies/tn0803046s/tn0803046s.htm>.

Eurofound (2011), *Reconciliation of work, private and family life in the European Union*, Dublin.

Eurofound (2010), *Working time developments – 2009*, Dublin. Available at: <http://www.eurofound.europa.eu/eiro/studies/tn1004039s/tn1004039s.htm>

Evans, J.M. (2001), *Firms' Contribution to the Reconciliation between Work and Family Life*, Labour Market and Social Policy Occasional Paper No.48, OECD, Paris.

Folkard, S. and Tucker, P. (2003), 'Shift work, safety and productivity', *Occupational Medicine*, Vol. 53:, No. 2, pp. 95-101.

Gareis, K. and Korte, W.B. (2002), *ICTs and the Adaptability of Work Arrangements in the EU*, Paper presented at the European Conference on Information Systems, Gdansk, Poland, June 2002. Available at: <http://is2.lse.ac.uk/asp/aspecis/20020073.pdf>.

Golden, L. (forthcoming, 2012), *The effects of working time on productivity and firm performance: a research synthesis paper*, Conditions of work and Employment Series, ILO, Geneva.

Goudswaard, A., Oeij, P., Brugman, T. and De Jong, T. (2009), *Guide of good practice on internal flexibility policies in companies*, Eurofound, Dublin.

Grover, S. L. and Crooker, K. J. (1995), 'Who appreciates family-responsive human resource policies: The impact of family-friendly policies on the organizational attachment of parents and non-parents', *Personnel Psychology*, Vol. 48, pp. 271-288.

Häusser, J.A., Mojzisch, A., Niesel, M. and Schulz-Hardt, S. (2010), 'Ten years on: A review of recent research on the Job Demand-Control (-Support) model and psychological well-being', in *Work & Stress*, Vol. 24, No. 1, pp. 1-35.

Hill, E.J., Miller, B.C., Weiner, S.P. and Colihan, J. (1998), 'Influences of the virtual office on aspects of work and work-life balance', *Personnel Psychology*, Vol. 51, pp. 667-683.

Igbaria, M. and Guimaraes, T. (1999), 'Exploring differences in employee turnover intentions and its determinants among telecommuters and non-telecommuters', *Journal of Management Information Systems*, Vol. 16, No. 1, pp. 147-164.

International Labour Office (2007), *Decent working time: Balancing workers' needs with business requirements*, ILO, Geneva. Available at: http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_145391.pdf

Jamal, M. (2004), 'Burnout, stress and health of employees on non-standard work schedules: a study of Canadian workers', *Stress and Health*, Vol. 20, No. 3, pp. 113-119.

Jeffreys, S. (2012), *Manufacturing Sub-contracting and Outsourcing in Five EU Member States: Definition, Trends and Employment Consequences*, Conférence Européenne – Améliorer les relations donneurs d'ordres/sous traitants dans le secteur industriel, 8 February 2012, National Agency for the Improvement of Working Conditions, Lyon Institute Confluences.

Kelliher, C. and Anderson, D. (2010), 'Doing more with less? Flexible working practices and the intensification of work', *Human Relations*, Vol. 63, No. 1, pp. 83-106.

Kerkhofs, M., Román, E. and Ester, P. (2010), *European Company Survey 2009 – Flexible profiles of European companies*, Office for Official Publication of the European Communities, Luxembourg.

Klein Hesselink, J., de Leede, J. and Goudswaard, A. (2010), 'Effects of a new fast forward rotating five-shift roster at a Dutch steel company', *Ergonomics*, Vol. 53, No. 6, pp. 727-738.

Klein Hesselink, J. and Goudswaard, A. (forthcoming, 2012) *Working Time* (WE-11-15-6). OSH-WIKI, European Agency for Safety and Health at Work, Bilbao.

Knauth, P. and Hornberger, S. (2003), 'Preventive and compensatory measures for shift workers', *Occupational Medicine*, Vol. 53, No. 2, pp. 109-116.

Makó, C, Farkas, É., Illéssy, M. and Csizmadia, P. (2011), *Contracting and Sub-contracting Relations. The Case of the Hungarian Manufacturing Firm*, Institute of Sociology, Hungarian Academy of Sciences, Budapest.

Makó, Cs., Illéssy, M. And Csizmadia, P. (2010), *Flexibility: debates and empirical data, Flexible employment and social dialogue development in the CEE countries – increasing the number of good active employers' practices*, MGYOSZ/Business Hungary, Budapest. Available at <http://www.Flemcee.org>

Messenger, J.C. (ed.) (2004), *Working Time and Workers' Preferences in Industrialized Countries: Finding the balance*. Routledge, London.

Michie, J. and Sheehan, M. (2005), 'Business Strategy, Human Resources, Labour Market Flexibility and Competitive Advantage', *International Journal of Human Resource Management*, Vol. 16, No. 3, pp. 445-64.

Michie, J. And Sheehan-Quinn, M. (2001), 'Labour Market Flexibility, Human Resource Management and Corporate Performance', *British Journal of Management*, Vol. 12, pp. 287-306.

Misterek, S.D.A., Dooley, K.J. and Anderson, J.C. (1992), 'Productivity as a performance measure', *International Journal of Operations & Production management*, Vol. 12, No. 1, pp. 29-45.

Neumann, L. (2009), *Industrial Relations in automotive sector: how can social dialogue assist a sector in crisis*, Institute for Social Affairs and Labour, Budapest.

Oeij, P.R.A., De Looze, M.P., Ten Have, K., Van Rhijn, J.W. and Kuijt-Evers, L.F.M. (2012), 'Developing the organization's productivity strategy in various sectors of industry', *International Journal of Productivity and Performance Management*, Vol. 61, No. 1, pp.93-109.

Oeij, P.R.A., Dhondt, S. and Wiezer, N.M. (2006), Organisational conditions for low stress-risk jobs: Europe's case, *European Journal of Social Quality*, Vol. 6, No. 2, pp. 81-108.

Parent-Thirion, A., Vermeylen, G., van Houten, G., Lyly-Yrjänäinen, M., Biletta, I., and Cabrita, J., Eurofound (2012), *Fifth European Working Conditions Survey. Overview Report*, Publications Office of the European Union, Luxembourg.

Patterson, F. (2001), 'Developments in work psychology: Emerging issues and future trends', *Journal of Occupational and Organizational Psychology*, Vol. 74, pp. 381–390.

Pedersini, R. (2010), *Social dialogue and recession in the automotive sector: a global perspective*, Publication Office of the European Union, Luxembourg.

Pillinger, J. (2006), *Challenging times: Innovative ways of organising working time: The role of trade unions*, Report of the ETUC Conference, ETUC, Brussels.

Plantenga, J. And Remery, C. (2009), *Flexible working time arrangements and gender equality A comparative review of 30 European countries*, Directorate-General for Employment, Social Affairs and Equal Opportunities, Publications Office of the European Union, Luxembourg.

Ságvári, B., Csizmadia, P., Farkas, É., Illéssy, M. and Makó, C. (2011), *National overview of sub-contracting in manufacturing. The Hungarian Case*, Institute of Sociology, Hungarian Academy of Sciences, Budapest.

Schieman, S., Milkie, A.M. and Glavin.P. (2009), 'When Work Interferes with Life: work–nonwork interference and the influence of work-related demands and resources', *American Sociological Review*, Vol. 74, pp. 966-988.

Schneider, E. (ed.) (2011), *Risks and Trends in the Safety and Health of Women at Work. European Risk Observatory. A summary of an Agency Report*, European Agency for Safety and Health at Work, Bilbao.

Towers Perrin (2003), *Working today: Understanding what drives employee engagement*, The 2003 Towers Perrin talent report, Towers Perrin, Stamford, CT.

Valverde, M., Tregaskis, O. and Brewster, C. (2000), 'Labor flexibility and firm performance', *International Advances in Economic Research*, Vol. 6, No. 4, pp. 649-661.

Voydanoff, P. (2004), 'The effects of work demands and resources on work-to-family conflict and facilitation' *Journal of Marriage and the Family*, Vol. 66, pp. 398–412.

Wolf, E. and Beblo, M. (2004), *Does work time flexibility work? An empirical assessment of the efficiency effects for German firms*, (Discussion Paper No. 04-47), Retrieved from ZEW website:

<ftp://ftp.zew.de/pub/zew-docs/dp/dp0447.pdf>.

Definitions of working time flexibility

Definitions of working time flexibility in this report

Working time accounts (or annualised hours): Employees have a contract for an average number of hours per week, while the actual hours per week may vary. The overtime worked in one week is saved on an account and can be used as leave in another week. Working time accounts are usually introduced by collective agreement, which sets the rules for the maximum deviation from the average number of hours per week, for the period in which leave should be taken, as well as rules for financial compensation and on the level of influence of employees over their account. In some cases an hour of extra work is financially compensated as an overtime hour or is counted as more than one hour (with a specific ratio). Working time accounts are usually introduced to cope with fluctuations in the demand for labour and can therefore be seen as company-oriented flexibility. However, they can also be implemented to provide employees the ability to accumulate hours and compensate later.

Working time accounts can differ in scope:

- Short-term accounts have a focus from one to two months, up to one year: when the account is based upon one year, employees can have a contract for a certain number of hours per year (annualised hours). These accounts are mainly used to cope with seasonal fluctuations in the amount of work.
- Long-term accounts over one year are mainly used by companies to cope with economic fluctuations that exceed one year and are used to prevent the dismissal of employees.

Variable working hours: Employees can be flexible in the number of hours they work per day or week or in the number of days they work per week. This can be combined with a working time account, but not necessarily so.

This type of working hours is flexible when the number of hours per day or week are scheduled in a work roster that varies per week. This type of working hours is non-flexible when employees work in a regular pattern (for instance: four days in one week and three days in the next; or four hours on Wednesday and eight hours on Thursday). In general, the more flexible forms will be related to fluctuations in the demand for labour within the company and are company-oriented. The more fixed forms are employee-oriented since they allow employees to combine work with private activities.

Working hours can vary in the following ways (or in combination of the following ways):

- Variable number of hours per day;
- Variable number of hours per week;
- Variable (number of) days per week.

Flexitime: With Flexitime, employees are allowed to choose their work arrival and departure times. This form of working time flexibility is mainly employee-oriented. Flexitime systems generally require employees to be present during a specified 'core' time when meetings or other company-wide events are scheduled. Employees are allowed to work early or late, depending on their personal preferences. Some people may come to work at 6.00 and leave at 15.00, while others will arrive at 9.30 and work until 18.00. However, all employees must complete their usual number of hours by the end of each working day (or week/month depending on their contract).

Flexitime can be implemented in a flexible or fixed way.

- **Flexible:** Employees are entitled to adapt the time when they start or finish their daily work according to their personal needs or wishes. In this flexible form, employees can decide per day (within certain limits) at what time they will start or finish their working day. In most cases there will be a timeframe defined in which the employees need to be at work and there can also be limits to the start and end times (for instance, start between 6.00 and 10.00 and finish between 14.00 and 18.00). In a few cases it will be entirely up to the employee, as long as the work gets done.
- **Fixed:** Individuals or groups of employees can have adjusted work hours according to their wishes, but there will be an (individual) agreement about the specific work hours. This agreement will determine the exact start and end times per day per person.

Staggered working hours: This concept involves the spreading out of employee arrival and departure times by anywhere from 15 minutes to two hours. This is usually more company-oriented, where flexitime is mainly employee-oriented. However, it can also answer to employee demands. This type of working hours can help reduce bottlenecks in parking lots or entrances to workplaces, but is also used to increase the company opening hours per day, when the workload at the start and end of the day is not as high as in the rest of the day.

Work outside office hours: This term refers to all situations where employees do not work regular office hours (defined as 9.00 to 17.00, Monday to Friday). Employees can work these hours in a regular way (for instance employees that only work in the evening or during the weekend). However, in most cases work outside office hours will be combined with (regular or flexible) work rosters or shift work. This type of working time flexibility is mainly company-oriented, since it answers to the demand for labour at those hours. However, it can be combined with demands from specific groups of employees that want to work only during these hours (for instance students or women with children who work when their partner is at home). Work outside office hours can be financially compensated through collective agreements, but this is not necessarily so. These agreements differ in their definitions of hours that are described as so-called ‘inconvenient’ hours and are granted with inconvenience benefits. Financial benefits are more often provided when the work performed outside the office hours is not done on an individual basis. The following forms of outside office hours can be distinguished:

- Work at night;
- Work in the evening;
- Work on Saturday;
- Work on Sunday.

Shift work: A form of working time flexibility designed to make use of or provide a service for 24 hours a day and seven days of the week (abbreviated as 24/7). This form of working time flexibility is primarily company-oriented. The term shift work includes both long-term night shifts and work schedules in which employees change or rotate shifts. There are many shift work systems. Shift work can have a collective basis (each shift is filled in by a fixed group of employees) or a more individual basis (individual work schedules). Shift work can have a regular pattern or a more flexible pattern, depending on the level of diversity between employees that is incorporated or depending on the regularity of the labour demand.

- **Regular shifts:** Regular shifts answer to a regular and predictable demand for labour. Examples of regular shifts are a two shift system (one morning and one evening shift from Monday to Friday), a three shift system (a morning, evening and night shift from Monday to Friday), several five shift systems that provide labour around the clock (24/7) (examples of regular five shift systems: 3-4-3 or 2-2-2). Regular shifts are usually collective (involving a fixed group of workers per shift).

- Flexible work rosters: This involves either the more irregular collective shift systems (with a more fluctuating demand for labour) or individual work schedules. In the individual work schedules, requests from employees can be integrated more easily.

Part-time work: Although part-time work is often considered as flexible labour in the research literature, it is not defined as such in this study. Here, only part-time work that is combined with any of the other forms of flexible working hours is considered a form of working time flexibility.

- Regular part-time work: The term regular part-time work refers to employee contracts for less than 4.5 days a week on a regular basis. These employees can combine this contract with other forms of working time flexibility, but will be paid according to their contract. When part-time work is done on a voluntary basis, this type of working hours is employee-oriented.
- Flexible part-time work: The term flexible part-time work refers to situations where employees can be asked by the company to come to work at short notice. This type of flexible part-time work can be based on a temporary contract, ranging between four and 20 hours per week. These employees are paid according to the actual hours they work. This type of working hours is mainly company-oriented, although it can also suit employees to be able to not respond to a request to work.

Compressed working weeks: Compressed working weeks are working weeks in which the employees work the same number of (full-time) hours but in fewer days. For example, they might work four ten-hour shifts instead of five eight-hour ones, or four nine-hour shifts, instead of 4.5 eight-hour ones. Compressed working weeks can be initiated by the employer on a collective basis (to save energy and costs) or by the employee on an individual basis to gain a day off per week. It can therefore be either company- or employee-oriented.

Shift length: The term shift length refers to the total number of hours an employee works in one shift or on one day. This term is not necessarily connected to the term shift work. The term shift in this respect means one ‘appearance’ on one day. The term broken shift refers to the fact that employees might need to come to work more than once on the same day. In this case, the total shift length will mean the total amount of hours worked in one day.

Length of the working week: The length of the working week means the total number of hours worked in one week. These hours can be fixed in the contract or in practice, but can also be more flexible (including the hours worked overtime or in the case of a working time account for a flexible contract). In the case of flexible hours per week, the average length of the working week is used.

Definitions of working time flexibility in the ECS and EWCS

The following forms of working time flexibility are measured in the ECS 2009.

- Flexitime: This refers to the percentage of employees entitled to adapt within certain limits the time when they begin or finish their daily work according to their personal needs or wishes.
- Working time accounts: Employees are allowed to accumulate hours, i.e. by working longer on some days and compensate this later by working less on other days. In this way they can accumulate full days off. Through long-term accounts they can accumulate over one year off. Flexible part-time work: This refers to flexible working hours that are fixed a few days or hours in advance according to the establishment’s needs.

- Work outside office hours: Employees who are regularly required to work:
 - at night between 23.00 and 6.00;
 - on Saturdays;
 - on Sundays.
- Shift work: This refers to the percentage of employees working in a shift system.

The EWCS (2010) measures forms of working time flexibility and related indicators by asking the following questions.

- Variable working hours or days:
 - Variable hours per day: Do you work the same number of hours every day?
 - Variable hours per week: Do you work the same number of hours every week?
 - Variable of days per week: Do you work the same number of days every week?
- Do you have fixed starting and finishing times in your work?
- On call work: Does your work include 'on call' time?
- Work outside office hours:
 - How many times a month do you work at night?
 - How many times do you work at the weekend?
 - Do you work shifts?
- How are your working time arrangements set?
 - Working time arrangements are set by the company;
 - Employee can choose between fixed schedules;
 - Employee can adapt working time within limits;
 - Entirely determined by yourself.
- The EWCS also gathers information about the average working week of the worker.