



UNIVERSITAT DE
BARCELONA

Approaches to variable pay systems

Rosa Garcia-Hernández



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de Barcelona



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PhD in Economics

Approaches to variable pay systems

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B Universitat de Barcelona

Als meus tres grans tresors:

En Jaume

La Laia

La Queralt

A la memòria de l'Andreu, el meu pare

A l'Antònia, la meva mare

A la Fina i el Cisco, els meus sogres

Als meus germans i nebots

“Ballem dins la panxa de la mare, als braços del pare, caminant amb un amic en la festa del poble. I ballant expliquem els nostres pensaments i, sobretot, les nostres emocions. I ho fem a partir del nostre cor, del nostre cervell, del nostre estómac, de la nostra mirada i de la nostra terra”

Joan Serra (coreògraf. Rubí 1947-2013)

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PREFACE

Only in our dreams are we free. The rest of the time we need wages.

Terry Pratchett

There are different “connecting bridges” between Economics as a discipline and the daily life. But one of them is certainly wages and remunerations. For example, everybody is worried about earned money monthly and if it will be enough for his or her expenses.

Word “salary” owes its origin to the Latin expression “salarium”, a payment in salt to Roman soldiers. From payment by salt in ancient Rome to payment by company shares, as today, there is a long history and a long way.

How wages are determined is a commonplace in Economics literature and in Labor Economics literature. But it has not take into account frequently variable forms of remuneration. One reason can be because they are considered close to Business or Management fields. Other reason is because sometimes there is no good enough database to work with.

The general goal of this thesis is to analyze the characteristics, the importance and the implications of Variable Pay Systems, using tools from Industrial Relations and from Labor Economics. So, is to include Variable Pay Systems into Labor Economics analysis and to include some Labor Economics considerations into Industrial Relations analysis of Variable Pay Systems.

This thesis is divided in four different chapters. In Chapter 1 we offer a literature review about definition and classification of Variable Pay Systems. Because their delimitation is one of the main problems to manage with them. This is a key chapter to understand the fundamentals of the rest of chapters.

In Chapter 2, we do an analysis of Variable Pay Systems in the case of nine companies from Spanish Automotive industry. We combine information from interviews and from collective agreements legal text with economic information from companies, from Sabi database. Using a qualitative

methodology, because we have few observations, our main conclusion is that the introduction of Variable Pay Systems sometimes could be closer to the strategies of multinational companies looking for higher level of competitiveness more than the search for improvement in employees motivation.

In Chapter 3, we analyze the connection between Variable Pay Systems and collective bargaining regimes. We use three waves from SES (years 2002, 2006 and 2010) and we chose six different European countries with different collective bargaining regimes. As a proxy of Variable Pay Systems we use “Annual Bonuses” and its breakdown (only for SES 2002) in Regular bonuses, Productivity bonuses and Profit sharing premiums. As a methodology we use probit regression in order to evaluate the probability of earning bonuses (proxy of Variable Pay Systems is the dependent variable) and if this probability has any kind of pattern connected with collective bargaining regimes. Our main conclusion is as bargaining regimes become much more decentralized, then bonuses depend on a larger number of variables, because bonuses (regular bonuses) in these situations are not included in collective agreements.

In Chapter 4, we use the same three waves from SES (years 2002, 2006 and 2010) to analyze the main relevant variables of wage determination, through OLS regression to a Mincerian wage equation which includes a proxy of Variable Pay Systems, this time, as an independent variable. And with all this calculations we use decomposition of wage variance through difference of the R2 coefficient, in order to look what is the contribution of bonuses to wage variance. Finally, we use Fields decomposition to evaluate which is the contribution of bonuses to wage inequality. Our main conclusion is that countries in which bonuses are explaining the most important part of wage variance are the same countries in which bonuses have highest incidence in wage inequality, through Fields decomposition. From 2002 to 2010 this countries would be, especially, Portugal and Poland, in first place, and in second place we would find Spain, Romania and Finland.

CHAPTER 1

INTRODUCTION

A study of the history of opinion is a necessary preliminary to the emancipation of the mind.

John Maynard Keynes

If you pay peanuts, you get monkeys

Leslie Coulthard

1.1 General framework

Variable Pay Systems (VPS) are not a new concept in the field of wages. Traditionally, they have been linked with the compensation in some industries (commission sellers, for example, in the insurance industry) or with the compensation of top executives.

However, in recent years, there has been a resurgence of interest in Variable Pay Systems or Performance Related Pay (Boachie-Mensah, F, 2011) encouraged by governments (Perry, Engbers and Jun, 2009) (Booth and Frank, 1999). This is coherent with the new view of organizations as a network of contracts linking incentives to performance (Dun-Icavy and Hood, 1994).

Variable Pay Systems and linking wages increases to company results has implied new forms of wage flexibility for several reasons. One of them is their implementation to all staff members, not just top executives. Another is their character of being non-consolidated pay¹.

The globalization of production and the intensification of product market competition are one of the elements which are explaining the change in the use of variable or contingent pay in some countries. (Pendleton et al, 2009)

¹Non consolidated payment refers to those one-off payments made to employees. Such payments do not form part of their salary or their full pay package. Moreover, such awards do not contribute towards pensions upon retirement.

Due to changes in the nature of work and technology, tasks become less “discrete” and more interdependent and for this reason, in the 1970s, long-term decline in the use of contingent pay was predicted (Elliot and Murphy, 1986). But changes in workplace environments and industrial relations from the 1980s have brought the opposite effect. For example, increase in competition could result in using more contingent pay to transfer risk to employees and to provide incentives in order to improve workers performance (Brown and Heywood, 2002; Drago and Heywood, 1995). Decreasing variable pay costs is an important point to take into account as it is connected, for example, with a decline in trade union power and with the development of more sophisticated ways of recording employee effort and output. (Pendleton et al, 2009).

One of the problems arising from the economic crisis (which officially began in 2008) was the controversial variable compensation of some employees in the U.S. banking industry, which rewarded the placing of so-called “subprime” mortgages among their customers. This fact not only was found in the U.S.A., but also in other countries. The business model for banks moved towards an equity culture with a focus on faster share price growth and earnings expansion during the 1990s. In order to capture the benefits of this business model and adapting, compensation had to evolve. Bonuses based on up-front revenue generation rose relative to salary and option and employee share participation schemes became the norm. The philosophy was: “if you pay peanuts you get monkeys”. (Blundell-Wignall et al., 2008).

1.2. Literature review

1.2.1 Definition and development of Variable Pay Systems

One of the problems of Variable Pay Systems is their definition and their classification.

In a first approach to Variable Pay Systems (VPS), they appear opposed to Fixed Pay Systems. In the Fixed Systems, employees receive an amount of money, usually monthly, in a fixed way, based on the Collective Agreement (CA) signed (according to occupational categories, number of worked hours, etc). Variable Pay Systems imply that money perceived by employees depends, for example, on the level of productivity, on company profits, etc, and a percentage of it would become “at risk” (Arrowsmith et al., 2007). Under these schemes, employees shoulder an equal share of the risk with the employer (Suff P. and Reilly P., 2004).

Variable Pay Systems have traditionally existed in different forms such as piecework wages, commissions or bonuses connected with productivity. These are what we have called “Old Forms of Variable Pay Systems”. Although some forms can be found from the late 1940s, is during the 1980s and the 1990s when popularity of these schemes became greater, because they are seen a possible solution for the problems of economic recession (Gilman, M.W., 1998), specially, in countries like USA and UK.

In this extension, some new features could be found. One novelty consists in seeing how some of what we called “New Forms of Variable Pay Systems” have emerged, such as the Financial Participation of Employees in Companies, that did not exist before (at least, not in countries like Spain). Another novelty is “New Forms of Variable Pay Systems”, which are similar to the “Old Forms of Variable Pay Systems”, but become non-consolidated pay in Collective Agreements.

Speaking in terms of “Old forms” and “New forms” of Variable Pay Systems may sound strange in the case of countries like the USA, UK and others in which Variable Pay Systems are widespread. But in Spain this distinction is completely relevant. In countries like Spain, the introduction or the new features of these variable remuneration systems is much more recent. For example, using old schemes which become non-consolidated pay in Collective Agreement or, for example, using new schemes like Financial Participation of Employees in Companies.

“Variable Pay in Europe” is the first main study about Variable Pay Systems published by EIRO (European Industrial Relations Observatory), at European level, including 15 countries plus Norway. According to this survey, Variable Pay Systems can be divided into three main categories (Van Het Kaar R. and Grünell M., 2001):

- 1) Payment by Results (PBR) or payment by quantitative performance. There is a relationship between payment and level of productivity or level of company’s financial results. This scheme is measured by fixed output norms, (Brown, 1973). It supposes an objective evaluation of performance.
- 2) Performance-Related Pay (PRP) or payment by qualitative performance. There is a relationship between payment and achievement of certain objectives

or targets². For example, not in the quantity of the output, but in the quality of the output. This scheme introduces an element of subjective evaluation of performance. (Gilman, 2004)

3) Financial Participation Schemes (FPS). Here we find, on the one hand, “Profit-Sharing Schemes”, where workers get a percentage of the company’s profits and, on the other hand, “Share-Ownership Schemes”, where a part of the payment adopts the form of company’s shares. (Suff P. and Reilly P., 2004).

“Payment by Results” (PBR) and “Performance-Related Pay” (PRP), being consolidated pay, would be part of the “Old Forms of Variable Pay Systems”. While “Payment by Results”, “Performance-Related Pay”, being non-consolidated pay and “Financial Participation Schemes” would be part of we have called “New Forms of Variable Pay Systems” and the new contribution to the field of Variable Pay Systems.

Moreover, we can explain that PBR usually are connected with Collective Quantitative Objectives. So, PBR will be always Collective PBR. But we can find 2 different kinds of PRP: Collective PRP, connected with Collective Qualitative Objectives and Individual PRP, connected with Individual Qualitative Objectives.

All these classifications will be very useful to analyze data from our case study. So, in the Spanish automotive industry the most widely used VPS are PBR and Collective PRP, but Financial Participation Schemes are not used in any case.

Other subsequent studies and papers (Pendleton A. et al, 2009) (Pouliakas K. et al, 2011) have added clarifications and they have gone deeper to this first classification. To evaluate any scheme of Variable Pay Systems we have to take into account two elements:

-If the scheme is connected with collective objectives of the firm or with individual objectives of the worker

² Some performance schemes focus on improvements that are mainly within the control of employees involved, such as product quality and customer service. However, some combine such measures with broader organizational objectives, like profits, over which employees can exercise very little direct influence². (Suff P. and Reilly P., 2004).

-If the scheme is connected with the objective evaluation or with subjective evaluation

So, in this latest classification Performance-Related Pay would become a generic concept and a synonymous of Variable Pay:

1) Individual PRP

-IPBR (individual payment by results). Evaluation of individual output (objective evaluation)

-MP (merit pay). Evaluation of individual performance (subjective evaluation)

2) Collective PRP

-CPBR (collective payment by results). Evaluation of collective output (objective evaluation) or collective performance (subjective evaluation)

3) Profit-Related Payments or bonuses

4) Share ownership schemes

Another classification is used by Workplace Employment Relations Survey (WERS) (Van Wanrooy B. et al, 2011):

-PBR (Payment by results). Including only IPBR and CPBR

-MP (Merit Pay).

-Profit-Related Payments

-Share ownership schemes

1.2.2. Reasons for the introduction of Variable Pay Systems

If we want to do a review of determinants of the introduction of Variable Pay Systems through the literature, we could make a distinction between the academic point of view and practitioners point of view. (Gilman, M.K., 1998).

1.2.2.1 Academic point of view

A) Approaches from literature

We would find three different approaches from literature to the reasons for the introduction of Variable Pay Systems (Arrowsmith et al., 2007):

A.1) Orthodox Economics approach

In a free market situation, without institutions or regulations, like trade unions, wages reflect the different productive capacities of workers (Minford,1985). So, pay systems would be configured by incentives which link effort and performance to rewarding employees (Marsden et al.,1999), creating a virtuous circle. (Arrowsmith et al., 2010).

A.2) Industrial Relations approach

According to some authors like Kessler and Purcell (1995), Variable Pay Systems would expose employees to market-risk and would reduce union roles through the process of decentralization and individualization of collective bargaining, (Arrowsmith et al. 2010). From the unions' point of view, Variable Pay Systems sometimes appear contrary to equality and fairness. And, sometimes, some schemes, like PRP, could be considered by unions as a fair way of differentiating in terms of effort and performance. (Arrowsmith et al. 2010).

A.3) Human Resource Management approach

From this point of view, Variable Pay Systems are a strategic response from Human Resource Management to international competition, deregulation and weakening institutions of collective bargaining, (Lawler, 1995).

B)“Hard” goals and “Soft” goals

If we focus on the analysis of PRP and their reasons for being introduced, we have to refer to “pay flexibility” goals, “hard” goals and “soft” goals introduced by Kessler and Purcell (1995). Following these authors, “pay flexibility” goals would refer to the control and reduction of labor cost by management: cost minimization would be the management’s concern. “Hard” goals would be connected with the attempt to undermine the collective dimension of industrial relations by management: the desire to reduce the importance of collective bargaining and to exclude unions from the process of pay determination would be a management concern. And “soft” goals would be related to employee skills, attitudes and values, fairness, retention of staff or change in organizational culture: the management concern here would be employee motivation.. (Kessler and Purcell, 1995).

In most studies, more than “hard” goals, companies emphasize “soft” goals:

B.1) Recruitment and retention

According to economic theory, increases and decreases in the price of labor are the best indicator of whether staff is in surplus or in demand. So, some schemes like PRP are not being only used to reward performance (Gilman, 1998).

B.2) Motivation

Improving motivation in employees would be the most commonly used reason to introduce Variable Pay Systems. In the case of PRP, some studies explain that they are used because offering more money will be incentive enough to make employees work harder. (Gilman, 1998).

B.3) Pay-performance link

From this point of view, Variable Pay Systems, would introduce some kind of fairness in distributing rewards. In the case of PRP, we can explain that a clear link between effort and reward will improve the employee performance (Gilman, 1998).

C) European Company Survey

The European Company Survey (ECS) 2009 was the second large-scale organizational survey carried out by Eurofound (Eurofound, 2010), after the European Survey on Working-Time and Work-Life Balance (ESWT) 2004-2005.³

Following this survey, the introduction of some forms of Performance Related Pay are connected with motivation of employees to perform well in some monotonous tasks. And Performance Related Pay related to team and work group bonuses are an important element to promote team work in companies. (ECS, 2009)

In the case of profit sharing schemes, according to the opinion of employers (63%), the most important motive for introducing profit sharing is to increase staff motivation. Their purpose is to increase employee involvement and to

³ ECS 2009 covered 30 countries, the 27 European member states and Croatia, the former Yugoslav Republic of Macedonia and Turkey (3 candidate countries). It included questions connected with pay systems used in companies interviewed. The survey was conducted in early 2009 and its first results were published in December 2009.

improve productivity. Only 14% of managers interviewed considered the reduction in wage costs an important factor⁴, and 21% considered it as a factor with some role. (ECS, 2009)

1.2.2.2 Practitioners' point of view

A) Conditions of international economy, international markets and governments

Between the 1980s and 1990s, many companies found difficulties in competing in the global market (their costs were too high and their quality of output too low). This was the situation for some American companies, for example (Belcher, 1996). Taylor's principle of division of labor does not work and the established management model was not useful. To adapt quickly to environmental changes employees had to be motivated to the results and viability of business (Belcher, 1996).

Beside this changes, an increased role of financial activity and financial institutions as an important point of the transformations of economy and society is observed (Stockhammer, 2013). This situation is known as financialization and include rising indebtedness of households, more volatile exchange rates and asset prices and short-termism of financial institutions. (Erturk et al, 2008) (Stockhammer, 2010). Financialization⁵ has had two important effects on the position of labour. First, firms have gained more options for investing: in financial assets as in real assets, abroad as at home. Second, it has empowered shareholders relative to workers by putting additional constraints on firms⁶. (Lazonick and O'Sullivan, 2000) (Stockhammer, 2004)

⁴ Establishments where the motive of wage reductions is more important than on average have specific characteristics: smallest size, belong to sectors of wholesale and retail trade, repair of goods and construction, no employee representation. (ECS, 2009)

⁵ The rise of financial incomes (dividend payouts and interest payment by non-financial firms) is well documented in the literature (Duménil and Lévy 2001, 2004; Hein and Schoder 2011, Onaran et al 2011). Although econometric evidence of the effects of financialisation on wage shares is mostly limited to country studies and some dimensions of financialisation, capital gains have, for some periods, increased dramatically (Power et al. 2003). ILO (2008, 39) thus argues that "financial globalization has led to a depression of the share of wages in GDP". (Stockhammer, 2013)

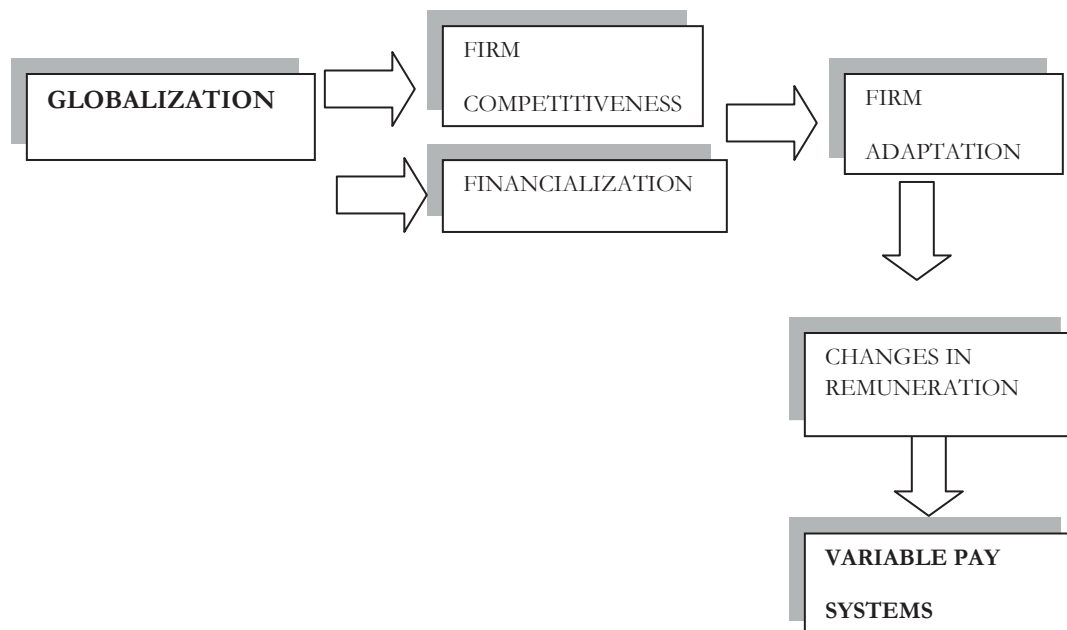
⁶ Private equity funds, buying firms by way of debt, is an example of this situation. The restructured firms then are burdened with servicing their debt and have little alternative to pursuing an aggressive cost-cutting strategy. (Rossmann, 2009)

And, for all these reasons, the compensation system needed to change with the new framework. This would be the reason why Variable Pay Systems were introduced: to adapt the new situation of international markets, in order to improve competitiveness level.

In the case of PRP, from the mid to late 1980s, some governments directly promoted these schemes through their economic philosophy of giving importance to market forces and to the “individualization” of the employment relationship, as a way to solve some problems, (Brown, Marginson and Walsk, 1995). Some management practitioners and consultants also promoted these new forms of compensation in companies. Also, throughout the 1980s and 1990s the use of concepts like “Human Resource Management” and “Total Quality Management” grew. HRM foregrounded the individual employee and TQM foregrounded the individual’s responsibility to product quality and customer service. And the individualized reward systems became an important part of HRM and TQM. (Gilman, 1998).

With the dotcom boom of the late 1990s, the use of more variable incentives, such as short term bonuses and share options, became more widespread, in order to compensate for low wage increases. The concern about perpetual economic growth meant that companies prioritized profits over other aspects. It was the financial sector that applied these principles in more extremely. Banks’ priority was to attract new customers, especially in the mortgage sector, without considering solvency. This behavior helped to inflate the bubble, the consequences of which are still being felt (Gómez, S. and Contreras, I., 2010).

Figure 1.1 Variable Pay as a consequence



Source: own elaboration

B) Variable Pay Systems and financial crisis

In May 2013 HayGroup Consulting published a global study where 1,300 companies from 80 countries were interviewed (HayGroup, 2010). Following this study, current financial crises have had an impact on Variable Pay Systems, slightly reducing their importance for the very first time (between 2008 and 2009). For example, if we look the evolution of percentage of participants with Variable Pay (Table 1) we can prove that the percentages became lower.

Otherwise, if we look at the same data between 2009 and 2010, we can conclude that those percentages are higher. Thus, very at the beginning of the present financial crisis, Variable Pay Systems decreased in importance, but after the first year, they recovered their position.

Table 1.1 Importance of participants with Variable Pay and without Variable Pay

	participants with variable Pay	participants without variable Pay
	% of total	% of total
2006	97%	3%
2007	96%	4%
2008	95%	5%
2009	94%	6%
2010	97%	3%

Source: HayGroup, July 2010

Variable Pay excesses, responsible for the financial crisis, have led governments and companies to introduce regulatory measures and changes (Gómez S. and Contreras I., 2010): better proportionality between fixed pay and variable pay⁷, better correlation between variable pay and long-term results and performance,⁸ or restricted stock options.

However, data show how the “redefinition” of remuneration policy is based, for example, on connecting Variable Pay with financial measures, like business strategy (61% surveyed companies) and with performance improvement (40% surveyed companies), as we can see in Table 2.1, instead of measures like employee satisfaction or reduction of risk. (HayGroup, 2010).

But the emphasis on financial measures leads to short-term measures, because performance is rewarded only if it provides profits directly and this could be worrying (HayGroup, 2010). It seems that history is repeating itself, because these kind of short term measures are better to avoid, due to their relationship with financial crisis.

⁷Variable Pay doesn't exceed 30% of total compensation

⁸ Payment depends not only on the current year's results, but on the results of the following years. Possible negative outcomes in later years, would prevent to pay all or part of variable pay.

Table 2.1 Most important factors to change variable pay program

Better alignment with business strategy	61%
Improvement in company or team performance	40%
Better alignment of individual performance with corporate performance	36%
Assured market competitiveness	29%
Satisfy external stakeholders demands (investors, media, community)	6%
Reduce risk	5%

Source: HayGroup, July 2010

In conclusion, after the last economic crisis, the use of Variable Pay Systems has had a much greater link to the company results or the improvement of competitiveness in the short term. For this reason, the initial problem could not be solved.

1.2.3 Variable Pay Systems and wage flexibility

If we accept the importance of establishment type in wage determination (a part from labor supply factors), is also important its adaptation strategy to economic situation. Therefore, is relevant to talk about the flexibility at company level (Black et al, 2008): particularly in the case of Variable Pay Systems, as a example of wage flexibility.

The concept of labor market flexibility relates to the ability to adapt to, and respond to, changing economic conditions (Klau and Mittelstadt, 1986), (Blau and Kahn, 2002) (Rubery and Grimshaw, 2003). In first formulations, Atkinson (1984) developed a model with three main forms of flexibility at company level:

- Numerical flexibility. Refers to the adjustment of total number of employees, varying types of contracts and the distribution of working time.
- Functional flexibility. Related to the capacity of employees to perform a variety of tasks and functions within the same company.

-Financial or wage flexibility. Connected with the ability of employers to adjust pay according to productivity, profitability and other performance measures.

Moreover, Wilthagen, Tros and Lieshout in 2003 distinguished four forms of flexibility (and security) as a way of approaching to concept of flexicurity⁹.

-External numerical flexibility (hiring and firing)

-Internal numerical flexibility (number of working hours)

-Functional flexibility (organization of work)

-Wage flexibility (performance or result-based pay)

Wage flexibility could be defined as the possibility of decentralization in Collective Bargaining and the possibility of supplementary negotiations. (Arrowsmith J. and Marginson P., 2008).

For all these reasons, Variable Pay Systems are a way of ensuring wage flexibility.

1.2.4 Variable pay as a motivational tool

Compensation forms can be viewed from different perspectives. (Milkovich and Newman, 1996). By society as a measure of equity or justice, without discriminations (“equal work for equal pay”). By employees as a reflection of their personal worth in terms of skills, abilities, education and training. By employers, on the one hand, as a expense, and, on the other hand, as a possible influence on employees attitudes and employee productivity through compensation-based motivational strategies, in order to improve competitiveness level. (Milkovich, 1998) (Boachie-Mensah, F, 2011).

Most of academic and policy literature on Variable Pay Systems or Performance Related Pay focuses on its role as an incentive system (Marsden, 2004). In recent years, there has been a trend, particularly in the private sector,

⁹ The Flexicurity concept was used by the first time in Netherlands in the mid of the 1990s. The Flexicurity model was first implemented in Denmark in 1990s. It was developed by sociologist Wilthagen. Flexicurity policy was adopted in 2007 within European Employment Strategy. This concept means softening flexibilization of employment relations through benefits in employment security and social security.

linking rewards to employee performance, attempting to enhance the achievement of organisational objectives (Mullins, 2005).

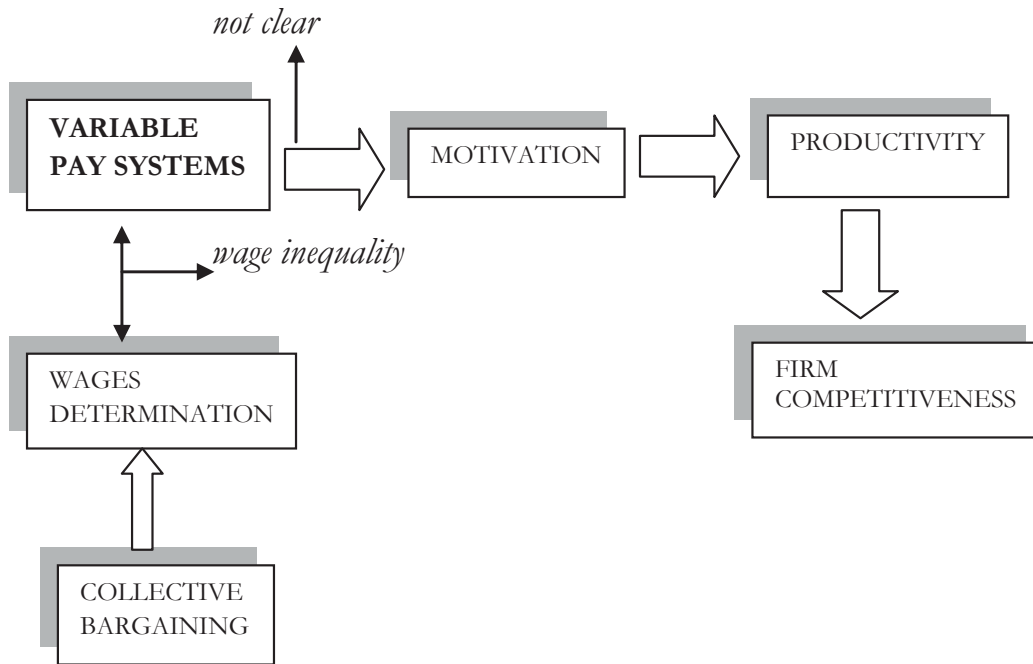
There are different theories which focus on the use of rewards for motivating employees to higher levels of performance to achieve corporate goals (Schuler, 1998). According to expectancy theory, individuals will exert effort if they expect it will result in an outcome that they value (Van Eerde and Thierry, 1996). So, employees will work harder if they value monetary rewards and believe that those awards will result from their increased efforts. (Boachie-Mensah, F, 2011).

At this point, we can connect this point of view, which mainly comes from Business and Management approach with neoclassical competitive model of labor market from Labor Economics, where wages are determined by worker productivity level. So getting a bigger motivation from the employees can be a manager's biggest challenge. (Boachie-Mensah, F, 2011). Because more motivation can imply more productivity and more productivity can imply more competitiveness for the firm. In this way, Variable Pay Systems would be a tool to improve motivation level and have a clear interaction with wages. But moreover, as wage determination is connected with collective bargaining, in most European countries, for example, Variable Pay Systems and Performance Related Pay are often related to collective bargaining.

But these motivation theories by compensation offer a very simplistic explanation, because they ignore important elements (Kessler and Purcell, 1992). They are shown to be untrue: organisational characteristics, environmental conditions, job characteristics and perceived pay systems create a complexity of relationships that not always goes in the expected direction (Perry, Engbers and Jun, 2009). In some studies, although most companies mention motivation, they are skeptical about the role of PRP inducing greater motivation. (Gilman, 1998).

Moreover, inequity in the administration of compensation (for example, because there is an unfair performance measurement) could create problems in wage determination (wage inequality). And unless total compensation scheme is perceived as internally equitable, employees with good performance are likely to leave (Schuler, 1998).

Figure 2.1 Variable Pay as a cause



Source: own elaboration

CHAPTER 2

VARIABLE PAY AND PRODUCT MARKET COMPETITION: THE CASE OF SPANISH AUTOMOTIVE INDUSTRY

There is one rule for the industrialist and that is: make the best quality of goods possible at the lowest cost possible, paying the highest wages possible.

Henry Ford

2.1 Introduction

The main aim of this chapter is to analyze if there is any empirical evidence of the relationship between the introduction of Variable Pay Systems and the strategies of multinational companies looking for higher levels of competitiveness, between 2010 and 2011. On a methodological level, a case study and techniques of Multi Value Qualitative Comparative Analysis (mvQCA) have been used, which have been applied in the Spanish automotive industry. Our preliminary results conclude that, as some of the literature suggests, one important determining factor for introducing these new forms of wage flexibility in the Spanish automotive industry would be searching for improvement in competitiveness through decreasing or low increasing of Unit Labor Costs¹⁰, not always increasing productivity level (proxy motivation level) but sometimes decreasing productivity level.

2.2 Motivation

2.2.1 General motivation

As we explained in Introduction chapter, some literature, like expectancy theory, links Variable Pay Systems introduction to motivation employees search (Van Eerde and Thierry, 1996). But other literature shows doubts about the role of Variable Pay Systems improving motivation level (Gilman, 1998). But, whether this variable remuneration schemes has, in terms of most

¹⁰ Unit Labor Cost is defined as the ratio between Workers' total Compensation and Labor Productivity.

ULC = Labor Cost (Total Compensation) / Labor Productivity (Felipe J. and Kumar U., 2011)

important firstly goal, achieving larger motivation as not, interesting point is which is their secondly most important goal. For most companies, improving employee motivation is not the last objective: it is just an intermediate objective to obtain the real objective, which is improving productivity and competitiveness. So, getting better motivation is just an intermediate objective in order to get the last real objective.

2.2.2 The case of Spain

Looking table 3.2, built with data from European Company Survey (Eurofound, 2015), in Spain, in 2013, 33.9% of people had a remuneration scheme of payment by results and 23.2% had a team-performance related pay. And also we can observe the increasing weight of Performance pay in Spanish Collective Agreements.

Table 3.2 Percentage people with Variable Pay Systems by classification

Payment results	PRP-Individual	PRP-Team	Profit-sharing	Share-ownership					
LT	72.2	CZ	74.3	EE	49.1	SI	55.4	FI	12.5
CZ	57.9	SI	72.5	ME	48.3	ME	53.7	LT	12.8
EE	56.9	ME	70.2	LT	47.6	LT	53.1		
AT	53	LT	67.2	SI	47.9	FI	50.8	MK	9.3
ME	51.9	MK	56.4	BG	41.3	AT	45.8		
SK	50	AT	56.4	SK	40.1	EE	41.8	FR	8.1
MT	46.3	SK	55.2	PL	39.7	FR	40.9	UK	8.6
FI	45.6	PL	54.6	LV	31.8	SE	37.6	TR	7.3
IS	43.1	DK	53.4	RO	29.2	DK	35.2	EE	7.9
RO	40.2	LV	48.4	TR	28.4	NL	34.2	AT	6.6
SI	40.2	NL	47.8	FR	26.3	BG	33.9	CY	6.0
PL	39.1	RO	45.3	PT	25.3	IS	31.7	IE	6.5
FR	38.5	DE	44.2	EU	25.2	EU	30.1	ME	5.6
NL	38.7	FI	44.5	UK	25.1	LU	28.8	EU	5.2
LU	37.7	IS	43.5	NL	24.2	UK	26.1	BE	4.9
DK	36.4	MT	43.4	ES	23.2	ES	25.1	ES	4.7
UK	36	EU	43	IE	22.5	TR	24.0	BG	4.5
HR	35.2	UK	41	EL	20.6	IE	23.5	CZ	4.4
BG	34.5	HR	40.3	HR	20.7	LV	22.6	PT	3.6
EU	34	BG	39.7	DE	18.3	CY	21.9	DE	3.0
ES	33.9	EL	39.3	BE	17.8	BE	19.4	RO	2.8
DE	31.2	ES	35.1	IT	17.7	EL	17.3	EL	2.4
EL	31.8	IT	35.2	IS	15.5	HU	16.6	LV	1.7
IT	18.4	BE	31.6	HU	15.3	MT	13.4	MT	0.2

Source: Own elaboration from ECS 2013 (Eurofound, 2015)

In the case of Spain is very difficult to get information about Variable Pay Systems. If anyone wants to analyze Variable Pay Systems in Spain, only it could be done through case studies, using interviews and collective agreements text. In our case, we only focus in nine companies, so we have to use a qualitative methodology, because we don't have enough observations to introduce a quantitative methodology.

Firstly, because in Spanish Collective Bargaining DataBase (Base de Datos de Convenios Colectivos) developed by Spanish Ministry of Employment is not useful. This database contains microdata records of all registered collective agreements with relevant information about 516 variables connected with wage compensation, working hours, agreed holidays, clauses on employment and contracting, etc. (Ruesga S. et al, 2007). However, despite the number of mentioned variables, this database can be feasible to analyze the wage increases or the reasons which explain this wage increases. But it is not useful to analyze wage compensation in the different collective agreements, because there is no information about it.

Secondly, because in Spain we don't have got any kind of database like Workplace Employment Relations Survey (WERS) in UK. WERS is a cross-sectional dataset and is the only study of British employment relations which collects data from employers, employee representatives and employees across a sample of 2.700 workplaces. WERS¹¹ has been undertaken six times: 1980, 1984, 1990, 1998, 2004 and 2011.

¹¹ There are five instruments in total, all of which are available to download from the main WERS website:

*Employee Profile Questionnaire (EPQ) – A self-completion questionnaire given to the manager respondent prior to the interview. The EPQ can be completed on paper or online.

*Management Questionnaire (MQ) – Face-to-face interview with the most senior manager responsible for staff and employment relations at the workplace.

*Financial Performance Questionnaire (FPQ) – A self-completion questionnaire distributed after the management interview, The FPQ can be completed on paper or online.

* Survey of Employees Questionnaire (SEQ) – A self-completion questionnaire distributed to up to 25 employees in the workplace. The SEQ can be completed on paper or online.

*Worker Representative Questionnaire (WRQ) – Face-to-face or telephone interview with the most senior representative of the largest recognised (or if none present, non-recognised) trade union and most senior non-union representative at the workplace.

In any report of WERS (the last one was in 2011) anyone can get information about “Paying for performance” and analyze the impact of Variable Pay in British economy.

And finally, we don’t have any kind of dataset which includes collective bargaining information and financial and economic companies information (like results, sales level, profit margin, etc).

2.3 Literature review and contribution

2.3.1. Contributions

Use of case study is not new in Variable Pay Systems field. For example in Arrowsmith et al, 2007 and Arrowsmith et al, 2010, the authors apply this methodology of case study to banking sector. And in the case of Nergaard et al, 2009, the same methodology is applied for the case of metal industry. The contribution of this chapter is to apply case study methodology in the case of Spanish automotive industry together with Multi Value Qualitative Comparative Analysis (mvQCA). And moreover the inclusion of variables which come out from remunerations point of view; they come from Sabi database with information about companies variables.

2.3.2 Competitiveness at company level

2.3.2.1 Definition

According to the economic literature we can talk about competitiveness from three different approaches: from a microeconomic point of view (companies), from a macroeconomic point of view (countries) and from a structural point of view (economic and productive environment), according to called “Porter Diamond”¹² (Ruesgas, S. and Da Silva, J., 2007).

Competitiveness at company level is defined as the ability of firms to compete in the markets, gain market shares, increase their profits and grow (Ruesgas, S. and Da Silva, J., 2007). The main determinants of the evolution of this kind of competitiveness would be: on the one hand, prices and the cost of production factors (commodities, labor, capital, knowledge) and, on the other hand, technological and organizational factors (quality of products, economies of

¹² Porter, M. (1990)

scale, technology, production organization, distribution systems and motivational skills) (Ruesgas, S. and Da Silva, J., 2007).

In a context of globalization and liberalization of international economic relations, with a higher level of competition, companies have more pressure to maintain or increase their market share and to increase their level of competitiveness. Their internationalization would be the logical consequence of this process (Ruesgas, S. and Da Silva, J., 2007).

As the cost of labor has decreased relative to the total cost of production¹³, other location advantages that are different from cheaper labor are necessary. Productivity, qualification of labor or infrastructure level are becoming more important factors in determining FDI (Ruesgas, S. and Da Silva, J., 2007).

So, if companies are looking to increase their level of competitiveness, they have to introduce more policies to improve their levels of productivity than policies to decrease their labor costs. Strategies to get a reduction of labor costs only affect a part of the structure of total costs (Luengo, F. and Álvarez, I., 2011). We would like to analyze whether Variable Pay Systems is a tool used by firms to reduce labor costs or to increase productivity.

2.3.2.2. Measuring competitiveness at company level

If we focus on the determinants of the competitiveness at company level, like prices and costs of production factors, we can analyze competitiveness from a prices point of view. (Gutiérrez, C., 2011).

These prices are determined by the total costs structure: commodities costs, labor costs and capital costs. But they are also determined by mark-up as the remuneration of the employer. However, often, labor costs are used to represent total costs and configured as determinants of prices and therefore the competitiveness. (Gutiérrez, C., 2011). If we take competitiveness from a prices point of view, one of the possible and more widely used indicators is Unit Labor Costs.

¹³ The ratio between labor costs and net operating income are variable depending different factors. However, it seems that the relative weight of labor costs in developed economies has tended to be reduced, often representing a small portion of the overall price of the product. In the Spanish economy, the figure was around 13% between 2001 and 2008 with a tendency to decrease (Bach Database).

We can define Unit Labor Costs as the ratio of a worker's total compensation (nominal wage plus all other labor-related costs to the firm), measured in euros per worker, to labor productivity, measured in terms of output per worker. So, Unit Labor Costs would show how cost would imply the production of one unit of output in terms of labor (Rory O'Farrell, 2010). But we can measure labor productivity in terms of real Added Value per worker, instead of physical output per worker. This is the most common way if we want to measure Unit Labor Costs at aggregate level (sector or whole economy) (Felipe J. and Kumar U., 2011) or if we do not have complete data about units of produced output.

So, the algebraic expression of what is called Nominal Unit Labor Costs (NULC) (Gutiérrez, C., 2011) or the ratio of total labor costs to real output would be:

$$NULC = \frac{(W_n/L)}{(VA_r/L)} \quad (1)$$

Where W_n refers to total labor compensation per worker and VA_r is real Added Value (nominal Added Value deflated by price index)

In this case, the NULC could be divided between labor share in total output multiplied by price index and would be called Real Unit Labor Costs¹⁴ (RULC) (Gutiérrez, C., 2011):

$$NULC = \frac{(W_n/L)}{(VA_r/L)} = \frac{(W_n/L)}{((VA_n/P))/L} = \frac{(W_n/L)}{(VA_n/L)} * P = \text{Labor share output} * P \quad (2)$$

$$NULC = RULC * P \quad (3)$$

Where VA_r would refer to real Added Value and VA_n would refer to nominal Added Value. (Felipe J. and Kumar U., 2011).

In the analysis of competitiveness at company level we can see that Variable Pay Systems are very relevant because this kind of remuneration scheme could influence ULC, keeping it low through two different ways: reducing total labor compensation (W_n) and increasing labor productivity (Q/L).

According to orthodox analysis, an economy at aggregate level is more competitive, in terms of higher market share, the the lower its unit labor cost

¹⁴ We can define changes in Real Unit Labour costs or Labour Share of output as changes in Nominal Unit Labour costs minus changes in prices (O'Farrell, 2010).

is. But, there are various arguments that contradict this statement; for example, Kaldor's paradox (Felipe J. and Kumar U., 2011). Therefore, a higher ULC does not necessarily lead to a less competitive economy: sometimes, a higher ULC in some countries implies a higher market share. The relationship between unit labor costs and growth competitiveness is much more complex. We have to take into account other aspects like technological changes or improvements which can determine an increase in market share. We have to see what factors are responsible for leading to a higher ULC.

So, if we analyze the evolution of the RULC in the eurozone and in the European Union we can observe a long-term downward trend in the labor share of income from 1995. At the beginning of the last economic crisis, we can observe an increase in the labor share of income, but this is typical in recessions because output falls faster than wages. Afterwards, the increase in unemployment levels and the slow wage growth implies a reduction of labor share of income. (O'Farrell, R. 2010).

Table 4.2 Labour Income Share (Real ULC) (%)

	2007	2008	2009	2010	2011
Ireland	0.58	0.64	0.64	0.61	..
Italy	0.67	0.67	0.69	0.68	0.68
Portugal	0.66	0.67	0.68	0.66	..
Spain	0.63	0.64	0.64	0.63	0.61
Greece	0.64	0.65	0.67	0.66	0.62
United Kingdom	0.69	0.69	0.71	0.71	0.71
United States	0.65	0.66	0.65	0.64	..
Germany	0.65	0.66	0.70	0.68	0.68

Source: OCDE

In the same way, if we look at other data, we can conclude that the countries that are having more trouble getting out of the crisis (such as Greece and Spain), less competitive countries, are those in which the increase in unit labor costs was negative in 2010 and in 2011.

Table 5.2. Unit Labor Costs. Annual growth rate

	2007	2008	2009	2010	2011
Ireland	4.01	6.27	-5.55	-7.20	..
Italy	1.81	3.89	4.39	-0.72	0.50
Portugal	0.80	3.05	2.43	-1.51	..
Spain	3.87	5.54	1.15	-1.89	-1.96
Greece	3.89	6.48	6.15	-1.01	-4.07
United Kingdom	2.02	3.09	5.56	1.28	1.48
United States	2.95	3.06	0.46	-0.91	..
Germany	-1.53	2.10	6.75	-1.94	1.28

Source: OCDE

Furthermore, we have to consider that a decrease in the RULC and a distribution of income that is much more focused toward capital will lead to an increase in investment in the short run, but in the long run will mean a fall in consumption. (Felipe J. and Kumar U., 2011).

At this point, we have to consider which other aspects could be influential to the increase of the NULC through prices, because the RULC are in a decreasing trend. And we have to observe the evolution of costs different from labor costs because, for all European countries analyzed, the explanation for the majority of increases in relative NULC came from changes in the price index, rather than from a greater share of output earned by workers (O'Farrell, R. 2010).

We can conduct the same analysis at firm level and we can apply the same explanation. Why is any company looking to improve its competitiveness only through reducing unit labor costs, but not through reducing other costs?

By reducing Nominal Unit Labour Costs and the price of other inputs, firms will be more price-competitive, growing net exports and employment. And at aggregate level, this reduction is used to ensure a competitive "simulated devaluation" or internal devaluation. But using Nominal Unit Labor Costs to assess international competitiveness and to assess firm competitiveness is hugely problematic (O'Farrell, R. 2010). Nominal Unit Labor Costs are important for exporting firms, because gives them a cost advantage. But the situation is completely different in the case of firms that sell directly to the

domestic market, which are less concerned about Nominal Unit Labor and more concerned about the share of output they take as profits. So, they have to take into account the price level for non-labor inputs, (rent, electricity, material inputs, etc.) (O'Farrell, R. 2010).

Analyses of competitiveness have been dominated by product markets and the evolution of price indexes. But, for all the explanation above, a change is needed: the improvement of international competitiveness should focus much more on non-wage costs than wage costs to firms (O'Farrell, R. 2010).

2.4. Methodological aspects and data

2.4.1 Spanish automotive industry

These variable forms of compensation have been introduced in most important companies in the Spanish automotive industry. We have chosen and we have focused on this sector not only for its importance in the Spanish economy, but because it has been one of the sectors where the implementation of Variable Pay Systems (with the developments outlined above, like generalization to all workforce) has spread more evidently.

For this reason, this chapter analyzes the impact of Variable Pay Systems in this industry, focusing on subsector 291, manufacture of motor vehicles, following the NACE classification¹⁵.

In 2010, the Spanish Automotive Industry represented 12.2% of total production and 7.9% of value added in manufacturing, generating 7.3% of industrial employment manufacturing and accounting for 21.4% of manufacturing exports. It occupies an upper-middle position in compensation per employee, productivity per employee and unit labor costs. The volume of exports in relation to their production is significantly higher than for the average manufacturing industry (61.1% vs. 29.6%). This industry has

¹⁵According to the NACE classification, the Automotive Industry corresponds to activity 29 and consists of 3 subsectors, that can be grouped into 2 major subsectors:

-291: manufacture of motor vehicles

-292 and 293: manufacture of bodies for motor vehicles, trailers and semi-trailers and parts and accessories for motor vehicles

remarkable drag effects on other manufacturing sectors (like the steel industry, textile, electronics, etc). (Ministerio de Industria, Energía y Turismo, 2012).

According to data provided by the European Labour Cost Survey (Torres & Carreras, 2013), of the nearly 177 existing automotive factories in Europe, the Spanish are the most competitive in terms of labor cost per hour, which lies between 9% and 11% of the total cost of a vehicle. Spain is ranked 10th in labor costs (€25.50 per hour) from 16 producing European countries. About half that of Germany and France, but also twice as much as Portugal and the Czech Republic sector.

The multinational ownership of these corporations determines their strategies of organizing production (heavily influenced by their financial strategies) to become more competitive in international markets and this fact has an impact on the industrial relations of these companies reclaiming higher levels of flexibility like wage flexibility. Moreover, their membership of large global groups and their large size implies that all of them have a company Collective Agreement (CA) and they do not use their sectoral Collective Agreement (CA). So their Collective Bargaining could be very different from other companies in the same sector.

2.4.1 A case study

On a methodological level, we used a case study¹⁶ analyzing the nine companies¹⁷ which are currently in the Spanish automotive industry¹⁸. On the one hand, from questionnaires and interviews with unions and managers and from legal texts, and on the other hand, additional data have been drawn from SABI database¹⁹, which contains information for 1,250,000 Spanish firms.

¹⁶ If we have to define a case study, we would say that “it would be a scientific inquiry that investigates a phenomenon in its real context, where the boundaries between the phenomenon and context are not displayed accurately, and the multiple sources of evidence are used” Ying (1989).

¹⁷ 9 companies out of 10, which accounted for 99.9% of total vehicle production and 99.4% of people employed. Since 2011 there have only been 9 companies in the Spanish automotive industry, because Santana-Motor, S.A. closed its car factory this year. This company accounted for 0.1% of the total vehicles production and 0.6% of people employed. Data from the Spanish Ministry of Industry Tourism and Trade 2009.

¹⁸ We have not carried out an analysis at plant or factory level, but at company level

¹⁹ SABI is a product of Bureau Van Dijk, which is a financial information and business intelligence company. SABI contains information for 1,250,000 Spanish companies and for 400,000 Portuguese companies.

With all collected information, a preliminary qualitative analysis has been carried out. A case study approach has been described as “crucial” to the understanding of developments in pay. (Kessler, 1994).

We decided to use a qualitative rather than a quantitative methodology²⁰ in this chapter, because we wanted to analyze in depth the implementation of Variable Pay Systems in the Spanish sector, before introducing an econometric model, and also because, apart from the Collective Agreements Database from Spanish Labor Ministry, we were only able to get detailed information on the remuneration system from the nine companies through interviews and legal texts of Collective Agreements²¹. To introduce a quantitative method, much more interviews from different companies, would be needed.

However, case studies are frequently criticized. The first criticism is that the results are inconsistent (Arias, 2003) and biased (Bonache, 1999 and Arias, 2003). The researcher is no longer objective: specifies the phenomenon to study, chooses the theoretical framework and analyzes the causal relationship between the events.

The second criticism, according to Rialp (1998), concerns the generalization of results from a necessarily limited number of cases studied. In reply to some authors it is proposed that the importance of qualitative studies lies not in the generalization of results obtained in a sample but in the development of a theory that can be transferred to other cases²².

²⁰ In some areas of economics, case study methodology and qualitative studies do not have good press and are considered rather “unscientific”.

²¹ On the one hand, we do not have national databases like WERS (Workplace Employment Relations Survey) in Britain²¹, published by the British government, which collects data from a representative sample of 2,680 British workplaces, or databases like the Panel Study of Income Dynamics²¹ in United States, directed by the University of Michigan, which includes data about employment, income, wealth, expenditures, health, child development, etc. On the other hand, we do not have European databases like ECS (European Company Survey)²¹ published by Eurofound (European Foundation for the Improvement of Living and Working Conditions), which is a large-scale representative survey addressed at managers and employees representatives.

²²Some authors, like Maxwell (1998), prefer to speak of "transferability" (generalization of a theoretical framework) instead of "generalization" (generalization of results) in qualitative research.

Despite all these criticisms, case analysis and qualitative methodology can be useful when we have large number of variables to consider and we only have information for a limited number of cases (Villarreal and Landeta, 2010). This could be equally applicable in the case of compensation systems and in the case of the VPS in Spain, where we have an insufficient number of cases to apply a quantitative methodology.

2.4.2 QCA and TOSMANA

Qualitative Comparative Analysis (QCA) is a qualitative methodology to be used in research in which the number of cases is relatively small (Small-N cases) and in which the number of variables can exceed the number of cases. It was introduced by Charles C. Ragin in 1987 and is based on an extension of Mill's method of controlled comparison relying on Boolean algebra. (Bechter, Brand and Meardi, 2012).

The main problem of QCA is the compulsory use of dichotomous variables, because every variable has to be transformed to fit into a discrete scale of {0 (not true);1 (true)}. To try to solve this problem, in 2000 Ragin introduced fuzzy sets methodology (fs QCA) with which it is possible to transform data on an continuous scale from 0 (fully out) to 1 (fully in), using probabilistic criteria (Cronqvist, 2003)²³.

Furthermore, in 2003 Lasse Cronqvist developed the software called TOSMANA (Tool for Small-N Analysis) which introduces the Multi Value Qualitative Comparative Analysis (mvQCA). TOSMANA uses discrete multi-value scales, and instead of applying probabilistic methods (like fuzzy-sets QCA) it applies the Boolean method. MvQCA is a generalization of QCA²⁴ and, like QCA, its main goal is to find a minimal solution representing all cases with a concrete outcome (Cronqvist, 2003)²⁵.

Some criticisms about QCA come from the different perspectives of scholars faced with this kind of methodology. Quantitatively-oriented authors focus their criticisms on topics like: robustness, probabilistic versus deterministic assertions, etc. Qualitatively-oriented authors complain that it is another form

²³The three qualitative breakpoints that structure a fuzzy set were three thresholds: {0.95; 0.5; 0.05} So, fuzzy sets allows the introduction of intermediate positions between 0.0 to 1.0. (Ragin, 2008).

²⁴ While QCA only includes dichotomous variables to be processed, MvQCA also includes multivalued variables in the analysis (Cronqvist, 2003).

²⁵ So, Tosmana introduces Multi-value minimization as an additional feature of Boolean minimization (Cronqvist, 2007).

of quantitative analysis: turning concepts into numbers, reducing cases to combinations of conditions, etc. (Schneider and Grofman, 2006).

Despite these criticisms, QCA, Fs/QCA and mvQCA have been explicitly introduced as methods for bridging the gap between qualitative (case-oriented) methodology and quantitative (variable-oriented) methodology (Schneider and Grofman, 2006). And, as we explained before, they can be useful in some research in which quantitative methodologies are impossible to apply, because we have small number of cases.

2.4.3 Data source

To obtain the empirical information in this paper, three sources of information were used:

-Interviews with unions and managers. These were conducted between 2011 and the beginning of 2012. We did nine interviews in six (C1, C2, C3, C4, C5 and C6) of the nine Spanish vehicle manufacturing companies, which are the most important in quantitative terms²⁶. These interviews were face to face only in one company (four interviews from nine) and in the other five they were phone interviews and they are based on the questionnaires²⁷ that we had sent to the companies previously.

-Legal texts of Collective Agreements. In the remaining three companies (C7, C8 and C9) of the nine companies, which are the less important in quantitative terms²⁸, we obtained information from their Collective Agreements, but not from interviews. Moreover, the information from legal texts complements the information from interviews in the case of the six companies above.

-SABI²⁹ database provides financial company information and business intelligence for 1,200,000 Spanish firms and more than 400,000 Portuguese firms.

²⁶ These six companies account for 94.2% of vehicles produced and account for 79.5% of people employed, in the Spanish vehicle manufacturing industry.

²⁷ See appendices.

²⁸ These three companies account for 5.8% of the vehicles produced and account for 19.9% of people employed, in the Spanish vehicle manufacturing industry.

²⁹ Belongs to the Bureau van Dijk group.

2.5 Main results

2.5.1 Main results from preliminary qualitative analysis

With obtained data from interviews and legal texts of Collective Agreements, we made a preliminary qualitative analysis comparing the nine different companies.

Questions 1 and 2 are about the weight of each company within the automotive industry and about their economic situation. Question 3 is about the possible precedents of Variable Pay Systems. Question 4 is about general features of the last VPS introduced in each company and questions 5 to 8 are about specific characteristics of the last VPS introduced. Finally, questions 9 to 12 are more connected with the analysis of reasons, from different points of view, for the introduction of VPS and its relationship with the economic crisis.

First, we focus in only answers for some questions and afterwards we summarize the main answers from all twelve questions.

Preliminary Conclusions about Question 4

If we analyze the most results in this Question 4 in five companies, we can say that only in **C1** and in **C6** wages increases have been modified, in the last CA, and now are calculated from Real CPI and not from Forecast CPI. This means that the wage revision clause disappears. The rest of the companies have not introduced any changes in their last CA and they continue using Forecast CPI.

Moreover, **C3**, **C4** and **C5** continue calculating wage increases from CPI + points determined in Collective Bargaining. Only, **C1** and **C2** have unrelated wages increases from Collective Bargaining.

In the case of **C1**, wages increases are connected with an Objective Bonus linked to Collective Objectives, like: quality, security, production program and absenteeism:

Real CPI + Objective Bonus

And in the case of **C2**, wage increases depend on expected Operative Results:

·Negative expected OR

Forecast CPI + from 0.1 to 0.5→ if real OR are better than expected OR

Forecast CPI → if real OR are worse than expected OR

·Positive expected OR

Forecast CPI → if real OR are negative

Forecast CPI + Bonus of maximum €500 → if real OR are positive too

This Bonus is connected with positive OR, quality and productivity.

Therefore, **C1** and **C2** are linking their wages increases, apart from with CPI, with different kinds of VPS. In C1 with a Collective PRP scheme (Objective Bonus) and in C2 with a PBR scheme, if expected OR are negative, and with a Collective PRP scheme (Bonus of €500) if expected OR are positive.

In both companies, **C1** and **C2**, increases CPI are consolidated but the additional Bonuses are non-consolidated pay. Bonuses are not included in salary scales.

And the remaining companies, **C3**, **C4**, **C5** and **C6**, have not introduced VPS in their wage increases. In C3, increases in CPI some years are consolidated pay and some years are non-consolidated pay.

C3 for example, in its last CA, it changed a part of its Bonus (10% of the total Bonus) into a variable Bonus, which is called Variable Productivity Incentive Bonus. This variable Bonus depends on Collective Objectives like: absenteeism quality, achievement of production program, etc.

This Variable Bonus is non-consolidated pay: it is not included in salary scales. So, if there is a wage increase, this Variable Bonus is not modified. And this is Collective PRP, which is a kind of VPS.

Most of VPS introduced by all different companies are Collective VPS, like Collective PRP, linked to Collective targets. And all of them are non-consolidated pay.

We can only find Individual VPS in the case of **C4**, where there has been the transformation of Collective Competitiveness Bonus in a new Individual Competitiveness Bonus, connected with collective criteria and with individual criteria. This new Bonus is non-consolidated pay and this is an Individual PRP, a kind of individual VPS.

The same **C4** has introduced an Autonomous production operator staff Bonus. And this Bonus is also non-consolidated pay and this is an Individual PRP, individual VPS.

C2 wants to unify all the Bonuses and to link them to individual performance. This would be a kind of Individual PRP, individual VPS and it does not mean a reduction in salary mass. Moreover, it wants to introduce Flexible pay which suppose a modification of base salary.

So, in the case of Individual VPS, like in Collective VPS, most of the schemes introduced are non-consolidated pay.

Preliminary conclusions for Questions from 9 to 12

The most significant reasons for introducing VPS from the point of view of management, analyzing all the companies, would be:

- Increasing flexibility in a context of economic crisis to become more competitive, reducing costs in exchange for keeping jobs. But it is not clear if VPS help to reduce wage costs or not.
- Linking performance with compensation.
- Motivating employees.

The most significant reasons for introducing VPS from the point of view of unions, analyzing all the companies, would be:

- Worldwide group pressure.
- Decreasing in wage costs for the company in some kinds of VPS. However, wages costs are only small part of total car production costs.
- They do not improve the motivation of employees, when small amounts of money are involved.
- VPS have not been introduced because of economic crisis. But the crisis made introduction easier. There is no turning back on the introduction of VPS.

The most significant elements which make up the opinion of unions about VPS would be:

-More supporters of collective VPS than individual VPS. Because individual VPS introduce more elements of subjectivity in a systems in which what is important is the overall performance. And moreover, Individual VPS increase competition among workers and this can leads to social breakdown.

-There are more controversial issues in collective bargaining than VPS, like flexibility in terms of worked days per year, working hours and file occupancy regulation (“ERE”)

We can conclude that the main opinions of unions about VPS will be focused on the preference for collective VPS over Individual VPS and in fact that VPS is not the main issue in collective bargaining.

Finally, when we analyze whether unions would accept VPS more if they had more participation in company decisions, we find that companies **C1**, **C2** and **C3** agreed with this affirmation. The reason was because this would give workers better control over wage issues. The ideal situation would be that in the Spanish factory unions had the same level of representation on the supervisory board as in some parent companies: similar compensation system and similar rights for workers. This statement would be shared by company **C6**.

And we find that companies **C4** and **C5** do not agree with last affirmation. The main reason is that more weight of representation on the board of the company does not necessarily mean better control of wage issues and better conditions for employees. In **C4** we see some experience of co-management, but not all the unions are satisfied with the results.

Company **C6** explains that it all depends on how the details of participation in company decisions are put forward.

Summary

We have summarized all the information for the 12 questions.

First, all companies belong to worldwide groups, and this determines the economic strategy they follow and influences their economic behavior. For example, it marks the outline of Collective Bargaining agreements. In a multinational company, benefits are shared only among staff from the parent

company, but not among all the staff all the group, which have also contributed to getting these benefits³⁰.

The type of company is an important point because higher foreign competition changes the structure of compensation, decreasing the level of non-performance pay and increasing the level of performance pay, according to Cunat and Guadalupe (2009). Companies have to respond to this increased competition with a shift from less internally focused to more market-based pay, quoting Towers (2004), to enhance organizational flexibility and efficiency. And VPS provide this additional flexibility and efficiency (Bechter, 2010).

Four companies (C1, C3, C6, C7) had positive economic results in 2011 and the other five companies (C2, C4, C5, C8 C9) had negative economic results. If we compare the results in 2011 to the situation in 2010, we can observe that four companies increased or improved their economic results (C1, C2, C6, C8) and the other five companies decreased or worsened their economic results (C3, C4, C5, C7, C9). However, it would be important to analyze the results of the worldwide consolidated group..

Second, Variable Pay Systems were already introduced for all the staff (leaving aside the staff outside the Collective Agreement) before 2010, in most companies. So, we can find precedents of VPS in the last but one Collective Agreement: C2 (2004-2008), C3 (2007-2009), C4 (2004-2007), C6 (2006-2009), C7 (2007-2010), and, in the last Collective Agreement, C9 (2009-2012). The exception was one company which introduced Variable Pay Systems in their last Collective Agreement, after 2010: C1 (2012-2015)

In this paper we want to analyze the introduction of VPS which affect staff within the Collective Agreement. The presence of VPS which affect staff outside the Collective Agreement is not new. We can observe that only two companies (C5 and C8) in the Spanish automotive industry have not introduced VPS yet: they have VPS which only include staff outside the Collective Agreement.

We have to take into account that we always talk about VPS inside Collective Bargaining, because in Spain Variable Pay schemes are always covered by

³⁰ From unions point of view.

Collective Bargaining (obviously for the staff that is covered by Collective Bargaining). But in other countries this could be different.³¹

Third, regarding characteristics of new implemented compensation systems, we can say that only two companies (C1 and C6) modified the reference of wage increases: it is no longer a forecast Consumer Price Index but a real Consumer Price Index. And this means that the wage revision clause disappears. These companies have unrelated wages increases from Collective Bargaining, connecting them with collective objectives, in the case of C1, and connecting them with expected operative results, in the case of C6. In the first case, we are looking at a Collective PRP and, in the second case, we are looking at a PBR combined with Collective PRP.

The seven remaining companies (C2, C3, C4, C5, C7, C8, C9) continue to calculate wages increases from the forecast Consumer Price Index + points determined in Collective Bargaining.

Given this context of economic crisis, Collective Bargaining places more emphasis on job security over wage increases. Moreover, a new philosophy of wage increases has been introduced, which is not as a result of the economic crisis, directly: the only thing that the crisis has done is to accelerate this process. Wage increases will be connected with aspects like results, competitiveness, etc.

Most of the VPS introduced by all the different companies are Collective VPS (in the seven companies that have introduced VPS: C1, C2, C3, C4, C6, C7, C9), like Collective PRP, linked to Collective targets. Most of them are non-consolidated pay and this is a very important point to make since it indicates a real change to other variable components that may already have existed.

Only three companies have introduced Individual VPS, in addition to Collective VPS (C2, C4, C6). For example, we can find Individual PRP which are linked to Individual targets and all of them are also non-consolidated pay.

Fourth, the legal texts of Collective Agreement only offer general information about wage increases and VPS: for more details you have to use other

³¹ For example, authors Lemieux, MacLeod and Parent in their paper (2012), use PSID to divide jobs on the basis of whether they pay for performance and if they are covered by collective bargaining. This distinction could not be made in the case of the Spanish Automotive Industry.

complementary legal texts, which can provide additional information. In most companies (C1, C2, C4, C6, C7, C9), VPS are added to total gross annual salary (total wage bills are not reduced) and imply a percentage of total gross annual salary representing 2.4% on average, according to the data from the companies that had information.

Fifth, from the management point of view the reasons for the introduction of VPS would focus on improving the competitiveness and flexibility³² of the company and on the motivation of employees.

These remuneration schemes would reinforce the feeling of belonging to the company. They do not involve any additional cost of supervision, because individual evaluation has been carried out long ago.

In the global financial crisis, automotive companies have to seek new wage revision formulae, which involve a paradigm shift. So measures to avoid inflationary situations and to increase and improve competitiveness are considered.

Companies need more flexibility in terms of worked days per year and the creation of “bundles of hours” to compete with other companies of the group and to ensure more possibilities that a new model could be assigned.

With the new wage payment system established, companies will have control over the evolution of wages over the next few years. This would offer them a tool to improve competitiveness through decreasing nominal wages and therefore decreasing Unit Labor Costs.

But these remuneration schemes would improve the predisposition of workers, because they perceive that something is at stake, if they do their job. So they are trying to influence the level of labor productivity. Therefore, we could deduce that Variable Pay Systems would offer a tool to improve competitiveness through increasing labor productivity. We can consider labor productivity as a proxy of employees’ motivation.

³² High, persistent unemployment has been attributed to a lack of wage flexibility (...). Low economic growth has also been attributed to wage inflexibility. In sum, the orthodox position has been that real wage flexibility is essential for low unemployment, stable and high economic growth, low inflation and successful structural adjustment. (Standing, 1999)

From the unions³³ point of view, the reasons for introducing VPS would focus only on reduction of wage costs (although they represent a small percentage of total production costs), not improving the motivation of employees and it would not have been introduced as a result of the economic crisis. The main purpose of VPS is to disconnect wage increases from CPI and to connect them with other indicators, with the idea of reducing the level of wage increases.

But in deciding not to close a Spanish factory and going to another country, the parent company can take into account other aspects apart from labor costs such as: work system, level of training of workers, connection with Autonomous Community government, etc.

These schemes do not help employees to feel the company as their own. Only if VPS are well constructed can they be an incentive and an element of motivation for some of the staff³⁴. But, sometimes low performance is not the fault of an employee but the company structure.

Sixth, the introduction of VPS not always has been done in exchange for keeping jobs directly in all companies. But even in companies in which this relationship is much more indirect, aspects connected with industrial future of Spanish factories and with the allocation of new car models are always included in Collective Bargaining.

Seventh, in the opinion of some unions, to introduce higher levels of co-management it would be necessary to make changes to corporate culture the economic system.

With data from all companies, we can conclude that there is not any direct relationship between the introduction of changes in compensation systems and the introduction of VPS in the Spanish automotive industry and the last economic crisis. However, due to the crisis all these changes have been

³³In the German automotive industry, unions remain a strong actor and the effects of globalization have largely been channeled into institutional forms such as opening clauses (Haipeter, Jürgens and Wagner, 2012). This could be also applied to the Spanish automotive industry.

³⁴ The demand for more flexibility and decentralisation of pay may alter distributive rules on pay and conceptualizations of justice. Growing flexibility (...) might force workers to compete with each other (Bechter, 2011)

introduced in a more comfortable way because they have experienced much easier acceptance.

Table 6.2. Main results from preliminary qualitative analysis

	Belonging worldwide group	Introduction date	Consolidated or non consolidated pay	Workforce covered	Max % gross annual wage	Addition to gross annual wage
C1	Yes	Last CA	NCP	SCA	1.5%	Added
C2	Yes	Before last CA	NCP	SCA	2%	Added
C3	Yes	Before last CA	CP and NCP	SCA	2%	No Added
C4	Yes	Before last CA	NCP	SCA	2%	Added+No Added
C5	Yes	-	-	SOCA	-	-
C6	Yes	Before last CA	NCP	SCA	5%	Added
C7	Yes	Before last CA	CP	SCA	-	Added
C8	Yes	-	-	SOCA	-	-
C9	Yes	Last CA	NCP	SCA	-	Added

CA: Collective Agreement

SCA: Staff Collective Agreement

NCP: Non Consolidated Pay

SOCA: Only Staff Out Collective Agreement

CP: Consolidated Pay

Source: own elaboration from interviews and legal text data

Table 7.2. Types of Last Variable Pay Systems

Last Variable Pay Systems (LVPS)

4)Changes: wages increases +	3)Changes: wage increases +	2)No changes +	1)No changes +	0)No changes +
Individual and Collective VPS	Collective VPS	Collective VPS	Individual VPS	No VPS
<u>Companies</u>	C2, C6	C1,C4	C3, C7	C9
				C5, C8

Source: own elaboration from interviews and legal text data

From Table 7.2, we have to explain that type 4) Variable Pay Systems has been considered the “Most advanced VPS scheme”, type 3) has been called the “Second most advanced VPS schemes” and types 2) and 1) are considered “Intermediate VPS schemes”.

2.5.2 Main results of mvQCA

Using Multi Value Qualitative Comparative Analysis (mvQCA) with TOSMANA software, we have analyzed which variables will determine and influence the introduction of different kinds of Variable Pay Systems in Spanish Automotive Industry companies.

As a dependent variable we have used one which includes the different kinds of VPS that could be introduced (LVPS).Taking into account whether there are wages increases or not or whether VPS are Collective or Individual.

When we analyze independent variables, we can distinguish between the variables using data from interviews and from legal texts (these would be descriptive statistics) and variables using data from the SABI database (which we used to do Multi-value minimization).

In the last case of independent variables coming from the SABI database, first we refer to the Economic Results of each company in 2011 and their evolution compared to 2010. We have chosen this period because it is the latest updated data in our database, but also because from 2010 to 2011 most

of the companies (C2, C3, C4, C6, C7, C9³⁵) introduced VPS schemes. Moreover, in the data prior to 2010 the consequences of the economic crisis could be included; so it would be much more difficult to isolate the impact of Variable Pay Systems.

Using TOSMANA software, first we see that the companies which introduced the most advanced or second most advanced VPS schemes are those companies in which we can observe positive economic results or negative economic results in 2011 and their improvement from the situation in 2010³⁶.

The companies which introduced an intermediate VPS scheme are those companies in which we can observe positive or negative economic results in 2011 but always with deterioration from 2010.

Table 8.2. Evolution of Economic Results (2010-2011)

Last Variable Pay Systems (LVPS)

Most advanced VPS scheme :

*Positive Economic Results in 2011 + Increase from 2010 **(C6)**

*Negative Economic Results in 2011 + Increase from 2010 **(C2)**

Second most advanced VPS scheme :

*Positive Economic Results in 2011 + Increase from 2010 (C1)³⁷

*Negative Economic Results in 2011 + Decrease from 2010 (C4)

Intermediate VPS scheme

*Positive Economic Results in 2011 + Decrease from 2010 (C3,C7)

*Negative Economic Results in 2011 + Decrease from 2010 (C9)

Source: own elaboration from interviews, legal text data and SABI database

³⁵ The results for C1 are not relevant because it began to introduce VPS in 2012

³⁶ The exception would be company C4 with negative results but decreasing from 2010.

³⁷ The results for C1 are not relevant because it began to introduce VPS in 2012

Second, we refer to Nominal Unit Labor Costs (NULC), a measure of competitiveness at firm level that is defined by the ratio between Labor Costs and Productivity. From the SABI database, we have calculated Labor Costs dividing the staff cost for each company among the number of its employees. And we have calculated the level of productivity dividing the Real Value added (Nominal added value deflated by gross added value industry price deflator, excluding building and construction³⁸) of each company among its number of employees.

But more than the value of ULC, we found much more significant the growth in NULC between 2010 and 2011. In the same way, we found the analysis of Productivity growth and analysis of Labor Costs Productivity growth to be much more significant.

From our results from the TOSMANA software, we can see that in most companies which have introduced the most advanced or second most advanced VPS schemes, there is a small increase and a decrease in Nominal Unit Labor Costs between 2010 and 2011, e.g. C1³⁹, C4, and C6. The main reason for the increase in Nominal Unit Labor Cost is a decrease in Productivity. And the main reason for decreasing Nominal Unit Labor Costs is a higher increase in productivity respect the increase in Labor costs.

So the trend for the evolution of NULC in this group of companies is closer to a small increase⁴⁰ and in some cases is connected with a higher decrease in productivity with respect the evolution of Labor costs.

The companies that have introduced intermediate VPS schemes are those in which we can observe an increase in Unit Labor Costs or a small decrease, such as the case of C3. In this case, the main reason for the increase in Nominal Unit Labor Costs could be an increase or a decrease in productivity. And the main reason for decreasing Nominal Unit Labor Costs is a higher in Labor costs with respect the decrease in productivity.

³⁸ AMECO (Annual Macro-economic Database). European Commission. Economic and financial affairs.

³⁹ The results for C1 are not relevant because it began to introduce VPS in 2012.

⁴⁰ The exception would be company C2 with a decrease in Unit Labor Costs, due to a higher increase in productivity than increase in Labor costs.

The trend for the evolution of NULC in this group of companies is closer to an increase and in some cases is connected with a higher decrease in productivity and in others is connected with an increase in productivity with respect the evolution of labor costs.

Table 9.2. Evolution of Nominal Unit Labor Costs (2010-2011)

Last Variable Pay Systems (LVPS)

Most advanced VPS scheme :

* Increase in NULC from 2010: increased labor costs and decreased productivity (C6)

* Decrease in NULC from 2010: increased labor costs and increased productivity (C2)

Second most advanced VPS scheme :

*Increase in NULC from 2010: decreased labor costs and decreased productivity (C1,C4)

Intermediate VPS scheme

*Increase in NULC from 2010: increased labor costs and decreased productivity (C7)

*Increase in NULC from 2010: increased labor costs and increased productivity (C9)

*Decrease in NULC from 2010: decreased labor costs and decreased productivity (C3)

Source: Own elaboration from interviews, legal text data and SABI database

However, in the case of these independent variables coming from the SABI database, a reverse causality can be found, because the evolution of Economic Results or the evolution of Nominal Unit Labor Cost may determine the introduction or not of Variable Pay Systems or may determine the kind of Variable Pay Systems schemes. But at the same time, the introduction of Variable Pay Systems can also determine the evolution of Economic Results and the evolution of Nominal Unit Labor Cost. So, Economic Results and Nominal Unit Labor Cost would become determining factors and consequences at the same time of the Variable Pay Systems.

For this reason, our results could be interpreted in both directions. One of the reasons for the introduction of the most advanced or second most advanced VPS schemes could be the improvement in Economic Results or the consequence of the introduction of this kind of Variable Pay System schemes. Similarly, one of the reasons for the introduction of the most advanced or second most advanced VPS schemes could be the small increase in Nominal Unit Labor Cost or the consequences of the introduction of this kind of Variable Pay System scheme.

We could repeat the same arguments in the case of intermediate VPS schemes. The deterioration in Economic Results or the increase in NULC could be the cause and the consequence at the same time.

2.6. Conclusions

In summary, the introduction of the most advanced and second most advanced VPS schemes in Spanish Automotive Industry companies will be connected with different factors:

- Belonging to a worldwide group or transnational corporation
- All staff are affected by them: not only top management. Inclusive VPS systems
- Introduction before last Collective Agreement: before 2010
- Addition to Gross Annual Salary. With a percentage of 2.4% on average
- Positive results in 2011 and improvement from 2010
- Low growth rates or decreasing rates of Unit Labor Costs

We can therefore conclude that there could be a relationship between the introduction of Variable Pay Systems and the strategies of multinational companies looking for higher levels of competitiveness, because in four companies (C1, C2, C3 and C6) of the seven which have introduced Variable Pay Systems, we can observe this connection. In these four companies, we can find the introduction of VPS schemes (most advanced and second most advanced) and low increases or decreases in Unit Labor Cost between 2010 and 2011. And this fact could indicate an improvement in the level of competitiveness. Moreover, in three of these companies (with the exception of

C1) Variable Pay Systems were introduced in the last but one Collective Agreement, before 2010.

The reasons for the small increase in ULC are connected with a decrease in Productivity level. The reasons of the decrease in ULC are connected with a higher increase in Productivity level (with respect to the increase in Labor Costs). This patterns are connected with cost structure for investment decisions in multinationals companies. So, the introduction of VPS is not always related to higher levels of Productivity and motivation of employees, if we consider Productivity as a proxy of motivation.

In Companies C4 and C7, which also introduced most advanced VPS, we can observe a major increase in Unit Labor Cost due to the largest decrease in Productivity level for all nine companies. This situation it is explained by the large decrease in added value in both companies, due to late effects of the economic crisis.

Company C9 shows an increase in Unit Labor Cost, but the introduction of VPS is not very significant. And, companies C5 and C8 have not introduced any type of VPS different from variable compensation schemes of top managers.

We should go further in our research to find more evidence of the connection of the introduction of VPS and the decrease in ULC and the improvement in competitiveness. But in spite of this, we can say that the way VPS may be improving competitiveness is not always by increasing motivation and Productivity levels. In some cases, it could be achieved through reducing Labor Costs⁴¹.

Because of its importance, we may transfer or generalize the theoretical framework and the findings from the Automobile Industry to other sectors of the Spanish economy. But to do this, we would need much more data and much more empirical evidende.

However, we can make some reflections on the Spanish economy as a whole. Sometimes, we can find proposals according to which the only way out of the current crisis in some countries of the Eurozone, like Greece, Ireland, Italy,

⁴¹ Flexibility and wage moderation have become key elements to maintain competitiveness in the Spanish Automotive Industry (Banyuls, Lorente, 2010)

Portugal and Spain is reducing unit Labor costs, through a reduction in nominal wages (Felipe J. and Kumar U., 2011).

If our problem is the lack of competitiveness, we cannot solve this problem only with measures to reduce Labor Costs. This only results in short term improvement in competitiveness. So, we have to look for mechanisms to increase productivity and, sometimes, VPS becomes just another way to look for competitiveness through reducing Labor Costs. The Spanish Economy must evolve and must find alternatives strategies if it wants improve its competitiveness and if it wants to come out of the last economic crisis.

As a final conclusion, this chapter argues that the main reason for the introduction of these new forms of compensation and new forms of wage flexibility is not only increasing workers' motivation (using Productivity as a proxy for motivation) and commitment to the company, as some literature suggests, or at least not directly. In some cases, this introduction can improve productivity and quality levels, but in other cases it can only increase competence among employees and reduce labor costs. So the introduction of Variable Pay Systems in the Spanish automotive industry would be related to the strategy of multinational corporations trying to improve their competitiveness in a global market through reducing Unit Labor Costs and through decreasing labor costs apart from increasing labor productivity.⁴² And this strategy could be extended to other, smaller companies (subsidiaries) and to other Spanish industries as a model to follow, because of their quantitative importance and drag effects in the Spanish economy.

Furthermore, we can find proposals according to which the only way out of the economic crisis in some countries of the Eurozone, like Greece, Ireland, Italy, Portugal and Spain (PIIGS)⁴³ is reducing their Unit Labor Costs,

⁴² One possible measure of competitiveness at firm level is unit labor costs and the two determinants elements are labor costs and level of productivity

⁴³ This is an acronym introduced by financial press, during the 1990s, referring to Portugal, Italy, Greece and Spain, countries that had troubled economies before joining the Euro. With the beginning of the financial crisis in 2008, the same press refers to these countries, including Ireland, as the five Eurozone nations with a worst economic situation: highest government deficit, highest public debt, highest external deficit.

decreasing their labor costs by decreasing their nominal wages (Felipe J. and Kumar U., 2011). Some economists (Black, 2010) have explained that these countries suffer from a competitiveness problem and to close the “competitiveness gap” (in particular with Germany) downward adjustments in wages are required in these five countries (Felipe J. and Kumar U., 2011). Sometimes, it is set that the only possible adjustment is through the labor market (“internal devaluation”), due to the inability to devalue the currency and the lack of monetary independence and due to fiscal rigidity. (Felipe J. and Kumar U.,2011). So we want to show different ways to improve competitiveness level different from reduction in Labor Costs.

CHAPTER 3

VARIABLE PAY AND COLLECTIVE BARGAINING IN EUROPE

The issue isn't just jobs. Even slaves had jobs. The issue is wages.

Jim Hightower

3.1 Introduction

There are different elements which explain the change in the use of variable or contingent pay in some countries. Apart from the globalization of production and intensification of product market competition, the rise of human resource management and, especially, the decline of collective industrial relations is an important point to take into account. (Pendleton et al, 2009).

The aim of this chapter is to analyze the connection between Variable Pay Schemes and collective bargaining regimes. And to look more closely the most important variables which are determining that some European countries have a greater probability in using some kind of bonuses. To do it, we take information from three last waves of SES database (2002,2006 and 2010) and we choose six different European countries with different kinds of collective bargaining regimes. Using probit regression model we observe the main relevant variables influencing Variable Pay Systems in every country, taking into account their collective bargaining regime. The main conclusion is that as a collective bargaining regime of a country become more decentralized, more variables have determining Variable Pay Systems, because some part of this bonuses (regular bonuses) are not included in collective agreement. When a country has a centralized collective bargaining regime few variables are statistically significant, because these bonuses are include in collective agreements.

3.2 Literature review and contributions

3.2.1 Contributions

Is it possible to find some literature in which an analysis of the determinants of Variable Pay Systems is done using probit regression model. This is the case of Pendleton et al, 2009, where the authors, using WIRS/WERS database, analyze the most relevant determinants of the Variable pay in UK, comparing the situation in 1984 with the situation in 2004. And in Kalmi et al, 2012, with data from CRANET (Cranfield Network on International Human Resource Management), a survey of company human resource practices, authors look into the determinants of Variable Pay Systems, dividing thirteen chosen countries in two groups: those with centralized pay determination and those with decentralized pay determination.

The main contribution of this chapter is to analyze the most relevant variables in the Variable Pay Systems, using a wide European database (SES), comparing the situation in three different moments of the time (2002, 2006 and 2010), between six chosen countries in function of their collective bargaining regime and in function of their availability to offer right data. Most of literature is focused only on UK Economy and in this chapter we open this analysis to other European countries.

3.2.2. Collective bargaining regimes and motivation

Due to absence of EU harmonisation and that country-specific institutions continued to exist, we could group EU's 27 member states into five clusters industrial relations regimes. (ETUI, 2012) (European Commission, 2009):

- 1) North European: Denmark, Finland and Sweden
- 2) Central-West European: Austria, Belgium, Germany, Luxembourg, Netherlands and Slovenia
- 3) South European: France, Greece, Italy, Portugal and Spain
- 4) Liberal-West European or Anglo-Saxon: Cyprus, Ireland, Malta and the UK
- 5) Central-East European: Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia

These five groups are differentiated from each other in terms of some elements. (ETUI, 2012)

-For the North, South and Central-West, multi-employer bargaining is observed, between unions and employer associations (sector level bargaining). For Anglo-Saxon and Central-East European states, single-employer bargaining, between individuals employers and unions, is the norm (company-level bargaining)

-In the North and Central-West European countries there are a relationship between political actors and trade unions and employer associations. In Anglo-saxon countries, social partners voice is not always reflected in policy outcomes. In Southern Europe, the participation of social partners in policy depends on governments' willingness. In Central-Eastern Europe, politicisation of social partners limits their influence in policy making.

-In Northern, Anglo-Saxon and Central-Western Europe, the state involvement is not common. In Southern Europe, state influences collective bargaining outcomes indirectly. (ETUI, 2012)

Looking to all the five different collective regimes, anyone could ask that belonging to one or to other regime has any kind of influence in the implementation of Variable Pay System.

3.3 Methodology and data

As a source of information, we used microdata from the Structure of Earnings Survey (SES) which, through a standardized methodology for all European countries, includes wage earners that contributed to the Social Security system in the whole month of October of the reference year. It is four-year survey (1995, 2002, 2006 and 2010) which offers a cross-sectional dataset and includes matched employer-employee microdata (observations for various workers employed in each establishment). (Ramos R., Sanromà E., Simon H., 2014).

Population reference level is contribution accounts to Social Security, selecting individual wage earners. SES use a two-stage sampling: statistical unit at the first stage are contribution accounts and the statistical unit at the second stage are selected workers from contribution accounts. The information collection method is a questionnaire filled in directly by every establishment.

The SES offers microeconomic information about wages of a large number of workers, about their characteristics and about employers' characteristics: we can get different observations (employees) from every employer.

We obtained the access to the microdata SES from Eurostat for 3 different waves (2002, 2006 and 2010) and for all European countries (Eurostat-Research Proposal 53/2015-SES)⁴⁴

From the SES database, we have chosen six different European countries, according to available information for the breakdown "Annual bonuses" and in order to obtain one country, at least, for every bargaining regime. That way, for Finland, Spain, Portugal, France, Romania and Poland the SES 2002 offers separate information about different types of bonuses: regular bonuses, productivity bonuses and profit sharing bonuses. This breakdown of "Annual bonuses" is only available for the SES 2002.⁴⁵ But we decided to keep the same selection of six countries to be able to do comparative analysis between SES 2002, SES 2006 and SES 2010.

Moreover, these six countries account for different bargaining regimes in line with the ICTWSS-Eurofound classification.

In order to take information about bargaining regimes, information from variable "Collective pay agreement" from Structure of Earnings Survey (SES) data set is used. This variable identifies the type of agreement covering at least 50% of the employees in the local unit. The different options that are offered by this variable are:

-National level or interconfederal agreement

-Industry agreement

⁴⁴ Part of the Department of Economic Policy and World Economic Structure research project of the UB called "Analysis and evaluation of public policies" ECO2012-38004 from the Spanish Ministry of Economy and Finance.

⁴⁵ This breakdown of "Annual bonuses" in SES 2002 is based on the former version of the EU Regulation (1916/2000). From the SES 2006 onwards the EU Regulation (1738/2005) is implemented and this breakdown is no longer available.

- Agreement for individual industries in individual regions
- Enterprise or single employer agreement
- Agreement applying only to workers in the local unit
- Any other type of agreement
- No collective agreement exists

ICTWSS 4.0 is a time series dataset drawn up by J.Visser and hosted by the Amsterdam Institute for Advanced Labour Studies (AIAS) which shows a large collection of variables and indicators in Industrial Relations for EU and OECD members (Eurofound, 2014).

We can combine this CA (collective agreement) SES classification with ICTWSS 4.0 database (Visser J., 2013) and Eurofound classification (Eurofound,2014) in Table 10.3:

Table 10.3 Bargaining regimes

<i>ICTWSS code and description*</i> <i>SESclassification</i>	<i>Eurofound classification</i>	
5 = bargaining predominantly takes place at central or cross-industry level	rather centralized	National CA level
4 = alternating between central and industry bargaining	rather centralized	
3 = bargaining predominantly takes place at the sector or industry level	Intermediate	Industry CA level / Individual industries in individual regions CA level
2 = alternating between sector and company bargaining	Intermediate	
1 = bargaining predominantly takes place at the local or company level	rather decentralized	Enterprise or single employer CA/ Local unit CA level

Source: Own elaboration from Visser (2013), Data Base on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts, 1960-2011 (ICTWSS) and SES (2006) Coding for categorical (or alphanumeric) variables.

*We use the variable “level” which means the predominant level at which wage bargaining takes place. A bargaining level is “predominant” if it accounts for at least two-thirds of the total bargaining coverage rate in a given year and country. If it accounts for less, but for more than one-third of the coverage rate, there is a mixed or intermediate situation, between two levels. (Visser, 2013).

If we take the definition from Third European Company Survey, “Variable Pay” refers to different components of pay which can vary over time in their amount. In this way, a distinction is made between performance-related pay which is linked to the performance of worker or group or workers and financial participation which is linked to the company results (profit-sharing schemes or employee share ownership schemes) (Eurofound, 2015).

With this dataset, we applied a probit regression in order to evaluate the probability of getting annual bonuses in the choosen countries. When we have a binary dependent (discrete variable) we could use a linear probability model. But some limitations can appear: probabilities can be under 0 or over 1, disturbances can be heteroscedastic or response probability can be linear in a set of parameters (Wooldridge, 2002) . To overcome this situation some more sophisticated binary response models can be used like logit and probit models with the following form:

$$P(y = 1|x) = G(\beta_0 + \beta_1 x_1 + \dots + \beta_k x_k) = G(\beta_0 + x\beta) \quad (1)$$

Where G is a function with values strictly between 0 and 1: $0 < G(z) < 1$. In the probit model, G is the standard normal cumulative distribution function, which is expressed as an integral:

$$G(z) = \Phi(z) = \int_{-\infty}^z \phi(v) dv \quad (2)$$

where $\phi(z)$ is the standard normal density $\phi(z) = (2\pi)^{-1/2} \exp(-\frac{z^2}{2})$ (Wooldridge, 2002).

Probit models are derived from an underlying latent variable model that we called y^* and that satisfies the classical linear model assumptions

$$\begin{aligned} y^* &= \beta_0 + x\beta + e \quad (3) \\ y &= 1[y^* > 0] \end{aligned}$$

The indicator function takes value 1 ($y=1$) if the event in brackets is true ($y^* > 0$) and 0 ($y=0$) if not ($y^* \leq 0$).

In a multiple linear regression model (linear relationship among parameters), coefficients meaning gives information about the change in dependent variable for a 1 unit change in the predictor, holding other factors fixed (ceteris paribus). So, we can get the partial effects of every independent variable on the dependent variable. In the case of linear probability model (LPM) which is a multiple linear regression with a binary dependent variable (response probability is linear in the parameters), β_j measures the change in the probability of dependent variable when dependent variable changes, holding other factors fixed (ceteris paribus). (Wooldridge, 2002).

But in probit analysis (response probability is non linear in the parameters), in contrast to the linear probability model, magnitude of coefficients are not useful. They give information about the change in the z-score or probit index for a 1 unit change in the predictor of latent model: so their relevant information is only about their signs (positive or negative) but not about their

magnitude⁴⁶. For this reason, a part from coefficients, is important reporting marginal effects in probit analysis. (Wooldridge, 2002).

We show the main results from different probit analysis regressions, for every country, through maximum likelihood estimation. As we explained before, because estimated coefficients are parameters of the latent model, with little relevance for us, we use marginal effects, mainly. They offer us information about the changing in probability of getting bonuses when the independent variable increases an infinitesimal amount (continuous variable), or from 0 to 1 unit or from base or reference level (discrete variables), holding the mean value for the other independent variables⁴⁷.

To evaluate goodness-of-fit we use two measures: on the one hand, a correctly predicted percentage and on the other hand, pseudo R squared.

We applied a probit regression to following general equation (4), in which Variable Pay Systems are the dependent variable, if we are considering all Annual bonuses:

$$AB_i = \alpha + HC_i \beta + WP_i \gamma + ES_i \delta + \varepsilon_i \quad (4)$$

But, if we are considering break down of Annual bonuses into regular bonuses (RB), productivity bonuses (PB) and profit sharing premiums (PS), we have to applied probit regression to following equations:

$$RB_i = \alpha + HC_i \beta + WP_i \gamma + ES_i \delta + \varepsilon_i \quad (5)$$

$$PB_i = \alpha + HC_i \beta + WP_i \gamma + ES_i \delta + \varepsilon_i \quad (6)$$

⁴⁶ $P(y=1 | x) = P(y^* > 0 | x) = P(e > -(\beta_0 + x\beta) | x) = 1 - G[-(\beta_0 + x\beta)] = G(\beta_0 + x\beta)$
(Wooldridge, 2002)

⁴⁷ All dummy variables are considered as a factor variable or discrete variable in the model. If they are considered as continuous variables the estimated model would be the same, but not the marginal effects. For example, one person could have at the same time either an age between 20-29years and 30-39years.

$$PS_i = \alpha + HC_i \beta + WP_i \gamma + ES_i \delta + \varepsilon_i \quad (7)$$

AB_i: annual bonuses for each worker i

RB_i: regular bonuses for each worker i.

PB_i: productivity bonuses for each worker i.

PS_i: profit sharing premiums of each worker i

HC_i: vector of human capital variables for each worker i. Dummy variables.

WP_i: vector of workplace variables for each worker i. Dummy variables.

ES_i: vector of variables describing establishment for every worker i. Dummy variables

α : intercept

β, δ, γ : vectors of parameters to be estimated

ε_i : random disturbance term

So, we evaluate the probability of getting annual bonuses or their breakdown (regular bonuses, productivity bonuses and profit sharing premium) in function of different independent variables:

*Individual factors or human capital factors (dummy variables with the exception of seniority): gender, education, age, seniority.

-Gender (male, female)

-Education⁴⁸ (less than primary education, lower secondary, upper secondary, post-secondary non tertiary, short-cycle tertiary, bachelor or master and doctoral education)

-Age (from 14 to 19 years old, from 20 to 29, age from 30 to 39, from 40 to 49, from 50 to 59, and 60 and more than 60 years old)

-Seniority

-Seniority²

⁴⁸ Following ISCED 97 classification.

*Workplace factors (dummy variables): occupation, workday, contract, supervisory

- Occupation⁴⁹
- Workday (fulltime, part-time)
- Contract (indefinite, temporary, apprentice)
- Supervisory (not supervisory, yes supervisory)

*Establishment factors (dummy variables): NACE classification, size, control, market, collective agreement

- NACE-Economic Activity Classification ⁵⁰
- Size (from 1 to 49employees, from 50 to 249, 250 employees and more)
- Control (private, public)
- Market (local, national, EU, world)
- Collective agreement (national, industry, individual industries in individual regions, enterprise, local unit, other agreement, no collective agreement exists)

We followed the same scheme as Pendleton et al used for UK case, with WERS dataset information (Pendleton et al, 2009).

3.4 Analysis from the SES 2002

From the SES 2002, variable “Annual Bonuses”⁵¹ includes any periodic, irregular, ad-hoc and exceptional bonuses and other payments that do not feature every pay period. Like Christmas and holiday bonuses, 13th or 14th month payments, allowances not taken, occasional commissions, productivity bonuses and profit-sharing premiums (Eurostat, 2004). The SES-2002 makes the differentiation between different kinds of bonuses. So “Total Annual Bonuses” (variable 3.2.2) =regular bonuses (holiday bonuses, 13th and 14th month payment, allowances not taken and occasional commissions) (variable 3.2.2.1) + productivity bonuses (bonuses linked to individual performance or

⁴⁹ Following ISCO-88 (COM).

⁵⁰ Following NACE rev.1.1.

⁵¹ “Total annual bonuses”(variable 3.2.2) in SES-2002 and “Annual bonuses and allowances not paid at each pay period” in SES-2006 and SES-2010

piecework) (variable 3.2.2.2) + profit sharing premiums (bonuses linked to the overall performance to the enterprise, under incentive schemes).

So, from “Total Annual Bonuses”, productivity bonuses would coincide with performance-related pay, following Eurofound definition, and profit sharing premiums would coincide with financial participation, following Eurofound definition. And regular bonuses would be considered as less “variable” bonuses from “Total Annual Bonuses”.

In tables 11.3 and 12.3, we include bargaining regimes and wage structure for different EU countries, respectively.

Table 11.3 Bargaining regimes (SES 2002)

FINLAND (FI)(125,169 observ.)	SPAIN (ES) (217,147 observ.)	PORTUGAL (PT)(62,587 obv.)
<p>%observ. 97.95% national CA 0.13% enterprise CA</p> <p>ICTWSS-Eurofound Bargaining regime: 5 (rather centralized)</p>	<p>%observ. 34% industry CA 41.6% individual industries in individual regions CA level 17.7% enterprise CA 3% local unit CA</p> <p>ICTWSS-Eurofound Bargaining regime: 4 (rather centralized)</p>	<p>%observ. 38% national CA 11.43% industry CA 11.52% individual industries in individual regions CA level 18.6% enterprise CA</p> <p>ICTWSS-Eurofound Bargaining regime: 3 (intermediate)</p>
FRANCE (FR) (121,178 observ.)	ROMANIA(RO)(230,161observ.)	POLAND (PL)(647,386 observ.)
<p>%observ. 94.19% national CA</p> <p>ICTWSS-Eurofound Bargaining regime: 2 (intermediate)</p>	<p>%observ. 75.76% enterprise CA</p> <p>ICTWSS-Eurofound Bargaining regime: 2 (intermediate)</p>	<p>%observ. --</p> <p>ICTWSS-Eurofound Bargaining regime: 1 (rather decentralized)</p>

Source: Own elaboration from Visser (2013), Data Base on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts, 1960-2011 (ICTWSS) and SES (2002) Eurofound Database

Table 12.3 Wage structure (SES 2002)

FINLAND (FI) (125,169 obsv.)	SPAIN (ES) (217,147 obsv.)	PORTUGAL (PT)(62,587 obsv.)
<p>Wage structure (average): Gross annual wage= 28,391.54€ Bonuses = 1,998.59€ Regularbonuses= 1,381.76€ 96%observations Productivitybonuses=616.82€ 34.43%observations (1% without regular bonuses)</p> <p>Total bonuses (120,618obs) 85.2% regular bonuses 14.7% productivity bonuses</p> <p>Gross annual earnings Weightbonuses= 6.2% Weightregularbon=4.7% Weightprodbon=1.5%</p>	<p>Wage structure (average): Gross annual wage = 18,348.12€ Bonuses = 3,085.52€ Regularbon=2,572.73€ 99%observations Noregularbon=512.80€ 23.95%obsery (0.53% without regular bonuses)</p> <p>Total bonuses (215,422obs) 93.3% regular bonuses 6.6% productivity bonuses</p> <p>Gross annual earnings Weightbonuses= 15.5% Weightregularbonuses=13.8% Weightnonregulbon=1.69%</p>	<p>Wage structure (average): Gross annual wage= 14,299.54€ Bonuses = 2,291.20€ Regularbonuses= 1,791.98€ 100%observations Productivitybonus=215.19€ 14.8%observations (0% without regular bonuses) Profitssharingb=284.02€ 13.6%observations (0% without regular bonuses)</p> <p>Total bonuses (62,587obs) 90.9% regular bonuses 4.4% productivity bonuses 4.6% profit sharing premium</p> <p>Gross annual earnings Weightbonuses=14.4 % Weightregularbon=12.4% Weightprodbon=1% Weightprofisharbon=1%</p>
FRANCE (FR) (121,178 obsv.)	ROMANIA (RO) (230,161 obsv.)	POLAND (PL) (647,386 obsv.)
<p>Wage structure (average): Gross annual wage=32,070.63 € Bonuses =4,816.15 € Regularbonuses=1,626.42€ 64.6%observations Productivitybonuses=1,401.50€ 28.8%observations (30.9%without regularbonuses) Profitssharingbonuses=1,401.89€ 43.5%observations (21.4% without regularbonuses)</p> <p>Total bonuses (103,730obsv) 47.6% regular bonuses 31% productivity bonuses 21.3% profit sharing premium</p> <p>Gross annual earnings Weightbonuses=12% Weightregularbon=4.9% Weightprodbon=4.2% Weightprofisharbon=2.9%</p>	<p>Wage structure (average): Gross annual wage=2,076 € Bonuses = 105.45€ Regularbonuses=80.97€ 46.1%observations Productivitybonuses=10.37€ 5.5%observations (21% without regularbonuses) Profitssharingbonuses=14.11€ 8.1%observations (25.26% without regularbonuses)</p> <p>Total bonuses (113.473obsv) 86.3% regular bonuses 5.6% productivity bonuses 8% profit sharing premium</p> <p>Gross annual earnings Weightbonuses=3.4% Weightregularbon=2.8% Weightprodbon=0.27% Weightprofisharbon=0.36%</p>	<p>Wage structure (average): Gross annual wage=7,163.07 € Bonuses =118.05 € Regularbonuses=92.22€ 18.6%observations Profitssharingbonuses=25.83€ 4.1%observations (100% without regularbonuses)</p> <p>Total bonuses (147,205obsv) 81.9% regular bonuses 18% profit sharing premium</p> <p>Gross annual earnings Weightbonuses=1.5% Weightregularbon=1.2% Weightprofisharbon=0.25%</p>

Source: Own elaboration from Visser (2013), Data Base on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts, 1960-2011 (ICTWSS) and SES (2002) Eurofound Database

Firstly, we can conclude that countries with rather centralized bargaining regimes according ICTWSS and Eurofound classification, like Finland (ICTWSS code 5) and Spain (ICTWSS code 4), including Portugal (ICTWSS code 3), are those which show higher percentage of observations with regular bonuses: 96%, 99% and 100%, respectively. In these 3 countries, almost all people from the sample earn regular bonuses, apart from other kind of bonuses. And it is difficult to find people earning productivity bonuses or profit sharing premiums, without being covered by regular bonuses. Percentages of people who earn productivity bonuses but who are not covered by regular bonuses are in Finland of 1%, in Spain of 0.53% and in Portugal of 0%. The percentage of people who earn profit sharing premium but who are not covered by regular bonuses are 0% in the case of Portugal.

Meanwhile, France (ICTWSS code 2), Romania (ICTWSS code 2) and Poland (ICTWSS code 1) show a lower percentage of observations with regular bonuses: 64.6%, 46.1% and 18.6%. In these 3 countries, we could find higher percentage of people who earns productivity bonuses but who was not covered by regular bonuses: 30.9% of people from sample in France and 21.03% in Romania. And a higher percentage of people who earn profit sharing premiums, but who were not covered by regular bonuses: 21.44% of people in France, 25.26% in Romania and 100% in Poland.

Secondly, is difficult to find any clear pattern connecting types of bargaining regimes and average percentages of different bonuses relative to total annual bonuses. Spain and Portugal show similar patterns with a high percentage of regular bonuses (93.3% and 90.9% respectively) and low percentage of productivity bonuses (6.6% and 4.4% respectively). Finland, with rather centralized bargaining regime, would be the exception: showing a higher percentage of productivity bonuses of 14.7%. France and Poland, with much more decentralized bargaining regimes, are the two 2 countries with higher average percentage of productivity bonuses (31% for France) and profit sharing premium (21.3% and 18%, respectively). In this case, Romania, with more decentralized bargaining regimes, would be the exception: having a lower average percentage of productivity bonuses of 5.6%.

Thirdly, if we analyze weight of bonuses relative to total gross annual earnings, we can say that Spain, Portugal and France, are the countries with higher average percentages of bonuses (15%, 14.4% and 12%, respectively). But only

Spain and Portugal with 13.8% and 12.3% are the countries with higher average percentage of regular bonuses. France has a percentage of 4.9%, very close to Finland with a percentage of 4.7% (but with only 6.2% of average percentage of total bonuses). Romania and Poland are the countries with more decentralized bargaining regimes and with lower average percentages of bonuses relative to total gross annual earnings (3.4% and 1.5% respectively). Also, they are the countries with lower average percentage of regular bonuses (2.8% and 1.2%). In the case of productivity bonuses, Finland, Spain and Portugal show similar average percentage (1.54%, 1.69% and 1%). As well as, Romania and Poland with average percentage for profit sharing premium (0.36% and 0.25%, respectively). France is the country with higher average percentage for productivity bonuses with 4.2% and for profit sharing bonuses at 2.9%.

So, we've found a clear pattern for bargaining regimes countries and the levels of covered by regular bonuses and the rest of bonuses. However, in terms of the weight of different bonuses relative to annual bonuses and to gross annual earnings, we can observe a similar pattern, on the one hand, for Spain and Portugal, and on the other hand, for Romania and Poland. Finland and France show isolated and individual patterns.

3.4.1 Results from the SES 2002

3.4.1.1 Annual bonuses.

First, we analyze the probability of getting whole annual bonuses (without any breakdown). In this case, we only can calculate marginal effects for four countries (Spain, France, Romania and Poland). In the case of Portugal, it is not possible achieving results, coefficients or marginal effects, because all the observations show bonuses (100% observations). In the case of Finland, coefficients are the only information that could be obtained (marginal effects are not estimable); so, we can take into account the signs of coefficients, but not their magnitude.

We divided different independent variables among individual, workplace and establishment factors.

In Table 13.3 (simplified⁵²) we can see that, for individual factors, there are some similarities among France, Romania and Poland (with more decentralized bargaining) in statistically significant coefficients. In all 3 countries the probability of getting bonuses is decreasing if people are males. In the same three countries, education level is a significant variable with the same correlation sign of getting bonuses. Otherwise, age is a statistically relevant variable for Finland, with higher probability especially for people from 40 years old⁵³. Seniority is an important variable to take into account for getting bonuses for all countries, but higher probability can be found in France, Romania and Poland (in the case of Finland we do not know the exact magnitude). Occupation is not estimable in the case of Spain and it has a positive correlation and statistically relevant for teaching professionals in the case of Romania and Poland.

In the case for workplace factors, we can highlight type of workday as a relevant variable for France and Romania and with lower incidence in the case of Spain. The probability of getting bonuses decreases for part time workdays, as well as, for temporary contracts, with higher probability in the case of France or Romania.

In connection with establishment factors, some sectors appear with a similar pattern for France, Romania and Poland. With decreasing probability, would be manufacture of wearing apparel and with positive probability would be supporting and auxiliary transport activities; other business activities; mining and quarrying; manufacture of coke; refined petroleum; manufacture of other non-metallic mineral products; electricity, gas and water supply and financial intermediation. And for Romania and Poland, relevant activities are manufacture of office machinery, computers; manufacture of medical, precision instruments; sewage, refuse disposal; recreational, cultural and sporting activities; hotels and restaurants; public administration and defence; education and health and social work. In the case of Spain few sectors are statistically significant, but most of them have a decreasing probability of getting bonuses. In the case of Finland, some activities are relevant like

⁵² For complete information see appendice B

⁵³ In the case of France, age is relevant only for people from 20 to 39 years old in a positive way (but with lower probability) and with decreasing probability for people with more than 60 years old. In some cases, Romania and Poland show age as a relevant variable, but with decreasing probability

manufacture of wood, pulp paper; sale, maintenance and repair of motor vehicle and retail trade. And other activities are relevant with the same pattern as the other countries: land transport, air transport; supporting and auxiliary transport activities; real estate activities; other business activities; manufacture of basic metals; hotels and restaurant and financial intermediation.

Company size is an important and relevant variable for France, Romania and Portugal. In the case of France and Romania, people in larger companies have higher probability of getting bonuses. Conversely, in the case of Poland, employees in larger companies have a decreasing probability of getting bonuses. Moreover, France, Romania and Portugal show the same pattern with ownership companies: private companies have a decreasing probability of getting bonuses. And market is a variable which is only positively relevant for Romania, meaning that in this country in companies which work in the national market or the European Union market anyone have higher probability of getting (in the case of Spain, this probability is decreasing).

Table 13.3 Annual bonuses 2002 (marginal effects)

MARGINAL EFFECTS ANNUAL BONUSES 2002	FINLAND coefficients	SPAIN marginal effects	FRANCE	ROMANIA	POLAND
INDIVIDUAL FACTORS					
Male	0.0484 (0.0311)	0.00103*** (0.000298)	-0.00693*** (0.00205)	-0.0143*** (0.00287)	-0.0270*** (0.00113)
bachemasteduc	-0.0608 (0.0535)	0.000127 (0.000592)	0.0247*** (0.00397)	0.123*** (0.0137)	0.0221*** (0.00289)
doctoraleduc	-0.0884 (0.249)	0.00263 (0.00134)	0.0359*** (0.00778)	0.149*** (0.0222)	0.0308*** (0.00254)
age5059	0.266*** (0.0625)	0.00151 (0.000920)	0.0103 (0.0102)	-0.00333 (0.0133)	-0.00451 (0.00331)
age60more	0.762*** (0.175)	0.000179 (0.00136)	-0.0532*** (0.0142)	-0.0961*** (0.0171)	
seniority	3.558*** (0.210)	0.000380*** (0.0000544)	0.00911*** (0.000333)	0.0250*** (0.000471)	0.0149*** (0.000188)
teachingasprof1			-0.0700 (0.0415)	0.214*** (0.0284)	0.0624*** (0.0134)
WORKPLACE FACTORS					
temporaryc	-0.145*** (0.0306)	-0.00154*** (0.000353)	-0.0917*** (0.00603)	-0.200*** (0.00845)	
ESTABLISHMENT FACTORS					
Manufacture of wood, pulp paper	0.821*** (0.163)	0.0000606 (0.000792)	0.0781*** (0.0152)	-0.127*** (0.0103)	
Supporting and auxiliary transport activities	0.767*** (0.160)	-0.00254* (0.00108)	0.0702*** (0.0144)	0.267*** (0.0115)	0.192*** (0.0103)
Real estate activities	1.472*** (0.175)	-0.00244 (0.00141)	0.0753*** (0.0134)	0.0348** (0.0111)	0.114*** (0.0102)
Mining and quarrying	-0.165 (0.385)	0.000613 (0.000848)	0.113*** (0.0147)	0.167*** (0.0119)	0.0964*** (0.0103)
Manufacture of coke, refined petroleum	-0.0640 (0.166)	0.000502 (0.000695)	0.111*** (0.0135)	0.106*** (0.0105)	0.149*** (0.0103)
Hotels and restaurants	2.678*** (0.226)	-0.00693*** (0.00122)	-0.0245 (0.0164)	0.192*** (0.0124)	0.143*** (0.0109)
Financial intermediation	2.308*** (0.235)	-0.00100 (0.000861)	0.123*** (0.0133)	0.316*** (0.0109)	0.141*** (0.0104)
Public administration and defence				0.318*** (0.00937)	0.397*** (0.0101)
Education		-0.00438*** (0.00129)		0.344*** (0.0123)	0.288*** (0.0101)
size250m	0.119** (0.0417)	-0.000160 (0.000354)	0.173*** (0.00309)	0.301*** (0.00338)	-0.177*** (0.00123)
privatectrl	0.353*** (0.0484)	-0.000205 (0.000560)	-0.0767*** (0.00296)	-0.237*** (0.00376)	-0.219*** (0.00156)
indindustregca		0.00171*** (0.000299)		0.0855*** (0.0100)	
enterpriseca		0.00145*** (0.000423)		-0.0306*** (0.00391)	
_cons	-0.457** (0.177)				
N	124745	217116	121178	230149	634465
PseudoR2	0.64	0.11	0.19	0.24	0.50
% correctly predicted	96.93%	99.21%	86.38%	75.16%	90.03%
Standard errors in parentheses					
* p < 0.05, ** p < 0.01, *** p < 0.001					

In table 14.3, we summarized the results for the most important variables which have relevant influence on higher probability of getting annual bonuses.

Table 14.3 Statistically significant coefficients for annual bonuses 2002

	FINLAND Barg.regime 5	SPAIN Barg.regime 4	PORTUGAL Barg.regime 3	FRANCE Barg.regime 2	ROMANIA Barg.regime 2	POLAND Barg.regime 1
Individual factors						
Gender		X+		-X	-X	-X
Education				X+	X+	X+
Age	X+			-X		-X
Seniority	X+	X+		X+	X+	X+
Occupation					X+	X+
Workplace factors						
Workday		-X		-X	-X	
Contract	-X	-X		-X	-X	
Supervisory						
Establishment factors						
NACE	X+			X+	X+	X+
Size				X+	X+	X+
Market		-X			X+	
Control	X+			X-	X-	X-
Col.Agreement		X+				

Source: own elaboration

If we repeated the previous regression but controlling for type of occupation and sectors the final results would be slightly different. The main differences would be that education become a relevant variable for Spain (but with lower probability) and for Finland at some levels. And the age variable would show a decreasing probability of earning annual bonuses in the case of Finland.

3.4.1.2. Regular bonuses

As in the case of annual bonuses, with regular bonuses we've got relevant information from five of the six countries. Again, in the case of Portugal, 100% observations show regular bonuses: there is no sense in applying a probit regression. And it is not possible to get marginal effects either Finland or Poland, so we have to use coefficients.

Looking at Table 15.3 (simplified⁵⁴), from the group of individual factors, education level and seniority are two variables with big influence in getting higher probability of earn regular bonuses. In the case of seniority there is no difference between five of the countries, but education is very important in the case of France, Romania and Poland, with different education levels: secondary, Bachelor's and Master's and Doctore level. However, education is not a significant variable in Finland and in Spain. Type of occupation is another variable which is relevant in the probability of earning regular bonuses in the case of Romania⁵⁵ and Poland: like teaching professionals, teaching associate professionals, extraction and building trades workers and sales and services elementary occupation.

In the case of Finland, age is again an important variable to take into account in earning regular bonuses, but not for France, Romania, Poland and Spain. And gender (male) supposes a positive probability of getting regular bonuses and have a decreasing probability in the case of France, Romania and Poland.

From the group of workplace factors, part-time workday and temporary contract show a decreasing probability of earning regular bonuses in half of countries (Spain, France and Romania). This means that anyone who has a full-time workday or an indefinite contract has a higher probability of getting regular bonuses

From the group of establishment factors, is more difficult to find a similar pattern among France, Romania and Poland in relation to sectors than in the case of annual bonuses. In France and Romania we can find some industries in which there is higher probability of earning regular bonuses: mining and quarrying, manufacture of coke, refined petroleum, manufacture of transport equipment, electricity, gas and water supply. And in France, Romania and Finland : land transport, air transport, manufacture of basic metals and financial intermediation. Public administration and education are the sectors with a higher probability of earning regular bonuses in Romania and Poland. And other business activities and hotels and restaurants in Romania, Poland

⁵⁴ For complete information see appendice B

⁵⁵ In Poland in only a low group of occupations, but in Romania in a large group of occupations

and Finland. Finally, in the case of France and Finland we have to underline the manufacture of wood and pulp paper and retail trade as important sectors.

Private ownership is only relevant for the case of Finland in a positive way and with decreasing probability in the case of France and Romania. The probability of earning regular bonuses working in a larger company is higher and relevant for France and Romania. National and European Union markets have a decreasing probability of getting regular bonuses for Spain and a positive probability for Romania. And, if the analyzed firm has a collective agreement for individual industries in individual regions, people working there will have a higher probability of earning regular bonuses in Spain and Romania and only in Spain in the case of enterprise collective bargaining.

Table 15.3 Regular bonuses 2002 (marginal effects)

MARGINAL EFFECTS REGULAR BONUSES 2002	FINLAND	SPAIN	FRANCE	ROMANIA	POLAND
	coefficients	marginal effects			coefficients
INDIVIDUAL FACTORS					
male	-0.0776* (0.0310)	0.00129*** (0.000347)	-0.0279*** (0.00346)	-0.0142*** (0.00285)	-0.157*** (0.00846)
bachemasteduc	-0.0671 (0.0529)	-0.000284 (0.000675)	0.0286*** (0.00644)	0.102*** (0.0137)	0.0841*** (0.0231)
doctoraleduc	-0.0877 (0.244)	0.00195 (0.00201)	0.0363* (0.0144)	0.151*** (0.0220)	0.160*** (0.0204)
age4049	0.233*** (0.0590)	0.000834 (0.00103)	0.0281 (0.0184)	-0.0169 (0.0133)	-0.149*** (0.0243)
age5059	0.251*** (0.0627)	0.00159 (0.00108)	0.0181 (0.0186)	-0.000919 (0.0136)	-0.0457 (0.0244)
age60more	0.827*** (0.176)	0.000371 (0.00155)	-0.0728** (0.0228)	-0.0938*** (0.0172)	
seniority	3.734*** (0.211)	0.000500*** (0.0000612)	0.0186*** (0.000556)	0.0237*** (0.000468)	0.0883*** (0.00145)
teachingasprof1			-0.00177 (0.128)	0.233*** (0.0278)	0.460*** (0.0917)
WORKPLACE FACTORS					
partialtimewd	-0.0763 (0.0478)	-0.00637*** (0.000721)	-0.116*** (0.00471)	-0.0828*** (0.0156)	
temporaryc	-0.172*** (0.0306)	-0.00154*** (0.000399)	-0.146*** (0.00880)	-0.192*** (0.00814)	
ESTABLISHMENT FACTORS					
Manufacture of wood, pulp paper	0.821*** (0.165)	-0.000208 (0.000883)	0.127*** (0.0205)	-0.112*** (0.0102)	
Retail trade	2.453*** (0.189)	-0.00766*** (0.00118)	0.103*** (0.0176)	-0.0512*** (0.0103)	
Supporting and auxiliary transport activities	0.783*** (0.162)	-0.00348** (0.00120)	-0.0289 (0.0194)	0.241*** (0.0118)	-0.809*** (0.0240)
Real estate activities	1.599*** (0.177)	-0.00245 (0.00145)	0.145*** (0.0173)	0.0280* (0.0109)	-0.438*** (0.0205)
Mining and quarrying	-0.0855 (0.392)	0.000392 (0.000986)	0.234*** (0.0205)	0.145*** (0.0118)	
Manufacture transport equipment	0.00269 (0.179)	0.00114 (0.000775)	0.134*** (0.0188)	0.203*** (0.00991)	-0.551*** (0.0653)
Hotels and restaurants	2.765*** (0.228)	-0.00709*** (0.00126)	-0.0521* (0.0213)	0.204*** (0.0124)	-0.525*** (0.0338)
Financial intermediation	2.393*** (0.238)	-0.00410*** (0.00112)	0.125*** (0.0174)	0.292*** (0.0111)	
Public administration and defence				0.326*** (0.00933)	1.485*** (0.0129)
Education		-0.00448*** (0.00133)		0.342*** (0.0125)	0.586*** (0.0103)
size250m		-0.000843* (0.000407)	0.312*** (0.00399)	0.295*** (0.00334)	-1.897*** (0.00937)
indindustregca		0.00222*** (0.000353)		0.104*** (0.0101)	
enterpriseca		0.00201*** (0.000478)		-0.0323*** (0.00391)	
cons	-0.459* (0.178)				0.0154 (0.0819)
N	124751	217116	121178	230149	308012
Pseudo R-Squared	0.66	0.10	0.17	0.24	0.50
Percent correctly predicted	97.05%	99.08%	72.99%	75.16%	90.03%

* p < 0.05, ** p < 0.01, *** p < 0.001

Table 16.3 shows a summary of the results for the most important variables which have relevant influence on the higher probability of getting regular bonuses.

Table 16.3 Statistically significant coefficients for regular bonuses 2002

	FINLAND Barg.regime 5	SPAIN Barg.regime 4	PORTUGAL Barg.regime 3	FRANCE Barg.regime 2	ROMANIA Barg.regime 2	POLAND Barg.regime 1
<i>Individual factors</i>						
Gender		X		X	X	X
Education				X	X	X
Age	X			X		X
Seniority	X	X		X	X	X
Occupation					X	X
<i>Workplace factors</i>						
Workday		X		X	X	
Contract	X	X		X	X	
Supervisory						
<i>Establishment factor</i>						
NACE	X			X	X	X
Size				X	X	X
Market		X			X	
Control	X			X	X	
Col.Agreement		X			X	

Source: own elaboration

So, with individual factors and workplace factors there are no important differences in relevant variables between annual bonuses and regular bonuses.

Summarizing, in countries with more decentralized collective bargaining like France, Romania and Poland, the probability of earning annual and regular bonuses is higher for females, for people with a high level of education and seniority, for teaching professionals, with a full-time workday and an indefinite contract. And for larger companies (more than 50 workers) and companies in sectors like: mining and quarrying, manufacture of coke and refined petroleum, manufacture of other non-metallic mineral products, electricity, gas and water supply, financial intermediation, public administration and defence or education.

In countries like Finland and Spain, with more centralized collective bargaining is much more difficult to find a common pattern. But we can see that the probability of earning annual and regular bonuses is higher for people older than 40 years old in the case of Finland, with higher seniority and an indefinite contract. And it is higher for private companies from some sectors: manufacture of wood and pulp paper, sale, maintenance and repair of motor vehicle, retail trade, supporting and auxiliary transport activities, real estate activities, hotels and restaurants and financial intermediation. In the case of Spain, this probability is higher for males, with greater seniority, with full-time workdays and indefinite contracts and for companies with different kinds of collective bargaining.

Table 17.3 Summarizing statistically significant coefficients for annual and regular bonuses 2002

	Centralized collective bargaining Barg.regime 5 Barg.regime 4	Decentralized collective bargaining Barg.regime 2 Barg.regime 1	Both
<i>Individual factors</i>			
Gender	X+(male)	X-(female)	
Education		X+	
Age	X+		
Seniority			X+
Occupation	X-	X+	
<i>Workplace factors</i>			
Workday			X-
Contract			X-
Supervisory			
<i>Establishment factor</i>			
NACE			X
Size		X+	
Market	X-	X+	
Control			X
Col.Agreement	X+		

Source:own elaboration

With variables like seniority, contract, workday, NACE and control is not possible to keep this 2 groups of countries depending on collective bargaining regime. Because these variables are relevant countries from both groups. But we could maintain 2 groups for the rest of variables, because they have a different behavior and relevance.

3.4.1.3 Productivity bonuses

We only have got relevant information on productivity bonuses for five or six countries. We do not have any information about this kind of bonus in the case of Poland.

In the case for individual factors, we find a similar pattern between Spain, Portugal and France in terms of gender. In all three countries, males have a greater probability of earning productivity bonuses. And we have to underline that education is a relevant variable in Finland and Spain in the case of productivity bonuses, but not for the rest of the countries. That situation is unlike the case for annual bonuses and regular bonuses. And, as with the previous bonuses, seniority is a relevant variable for all countries.

In terms of workplace factors, there are no a new situation to report for annual and regular bonuses. In most countries, people with a full-time workday and with an indefinite contract have higher probability of earning productivity bonuses.

As far as establishment factors are concerned, for Portugal, France and Romania, in companies from some industries the probability of getting productivity bonuses is higher: sale, maintenance and repair of motor vehicles, supporting and auxiliary transport activities, manufacture of basic metals and financial intermediation. For Finland, the most important sectors with higher probability of earning productivity bonuses are: manufacture of wearing apparel, manufacture of office machinery, computers, manufacture of transport equipment and electricity, gas and water supply. For Spain, we should highlight the role of two sectors: electricity, gas and water supply, as in Finland, and financial intermediation as in the rest of the countries. In terms of size, larger companies have higher probability of earning productivity bonuses in Spain, Portugal, France and Romania. This higher probability can also be found, in private companies in Portugal and France. Market is a relevant variable in earning productivity bonuses for Spain and Portugal. And finally, in Finland, Spain and Portugal companies with enterprise level bargaining agreement have higher probability of getting productivity bonuses.

Table 18.3⁵⁶ Productivity bonuses 2002 (marginal effects)

MARGINAL EFFECTS PRODUCTIVITY BONUSES 2002	FINLAND	SPAIN	PORTUGAL	FRANCE	ROMANIA
INDIVIDUAL FACTORS					
Male	-0.00813* (0.00347)	0.0259*** (0.00233)	0.0128*** (0.00312)	0.0276*** (0.00310)	-0.00189* (0.000929)
bachemasteduc	0.0882*** (0.00598)	0.0589*** (0.00449)	0.0239** (0.00754)	0.00271 (0.00574)	0.0121* (0.00472)
doctoraleduc	0.0910*** (0.0247)	0.112*** (0.0207)		0.0344** (0.0133)	0.00692 (0.00637)
age3039	0.109*** (0.0123)	0.00631 (0.00934)	0.0314** (0.00991)	0.0546** (0.0179)	-0.0156* (0.00659)
age4049	0.103*** (0.0124)	0.0129 (0.00950)	0.0244* (0.0102)	0.0323 (0.0180)	-0.0193** (0.00660)
seniority	0.00698*** (0.000489)	0.00507*** (0.000367)	0.00507*** (0.000558)	0.00450*** (0.000503)	0.00123*** (0.000155)
WORKPLACE FACTORS					
temporaryc	-0.146*** (0.00513)	-0.0436*** (0.00275)	0.0226*** (0.00453)	-0.106*** (0.00682)	-0.0182*** (0.00216)
yesupervisory		0.0209*** (0.00233)	0.00985 (0.00590)		-0.00373 (0.00447)
ESTABLISHMENT FACTORS					
Manufacture of wood, pulp paper	0.134*** (0.0191)	-0.0589*** (0.0103)	0.0355*** (0.00761)	0.0150 (0.0184)	0.000234 (0.00264)
Manufacture of office machinery, computers	0.184*** (0.0191)	0.00235 (0.0107)	0.00649 (0.00720)	-0.00694 (0.0159)	0.0288*** (0.00342)
Sale, maintenance and repair of motor vehicle	-0.135*** (0.0189)	0.0234* (0.0104)	0.0936*** (0.00804)	0.117*** (0.0152)	0.0253*** (0.00290)
Supporting and auxiliary transport activities	-0.132*** (0.0193)	0.00865 (0.0109)	0.185*** (0.0124)	0.139*** (0.0170)	0.0253*** (0.00371)
Manufacture of transport equipment	0.158*** (0.0207)	-0.0316** (0.0104)	0.0318*** (0.00761)	-0.0495** (0.0161)	0.0220*** (0.00289)
Electricity, gas and water supply	0.161*** (0.0226)	0.0532*** (0.0115)		0.0193 (0.0167)	0.0361*** (0.00346)
Financial intermediation	-0.0337 (0.0199)	0.289*** (0.0106)	0.123*** (0.0102)	0.0816*** (0.0152)	0.0401*** (0.00425)
size250m		0.137*** (0.00275)	0.118*** (0.00382)	0.115*** (0.00341)	0.0248*** (0.00113)
privatectrl	0.0260*** (0.00536)	-0.0989*** (0.00452)	0.0868*** (0.00395)	0.0306*** (0.00595)	-0.0212*** (0.00135)
nationalmarket		0.0346*** (0.00241)	0.0366*** (0.00369)		0.0175*** (0.00103)
enterpriseca	0.526*** (0.0305)	0.0174*** (0.00308)	0.0367*** (0.00807)		-0.000413 (0.00123)
N	125169	217147	62566	121178	230149
Pseudo R-Squared	0.17	0.14	0.07	0.05	0.099
Percent correctly predicted	72.63%	77.68%	85.20%	71.75%	94.40%
Standard errors in parentheses * p < 0.05, ** p < 0.01, *** p < 0.001					

⁵⁶ For complete information see appendice B

Table 19.3 shows a summary of the results for the most important variables which have a relevant influence on the higher probability of getting productivity bonuses.

Table 19.3 Statistically significant coefficients for productivity bonuses 2002

	FINLAND Barg.regime 5	SPAIN Barg.regime 4	PORTUGAL Barg.regime 3	FRANCE Barg.regim e 2	ROMANIA Barg.regime 2
<i>Individual factors</i>					
Gender		X	X	X	
Education	X	X			
Age	X				
Seniority	X	X	X	X	X
Occupation					
<i>Workplace factors</i>					
Workday	X	X	X	X	
Contract	X	X	X	X	X
Supervisory		X			
<i>Establishment factor</i>					
NACE	X	X	X	X	X
Size		X	X	X	X
Market		X	X		X
Control	X	X	X	X	X
Col.Agreement	X	X	X		

Source: own elaboration

In the case of productivity bonuses, it is much more difficult to make a classification of variables following bargaining regimes. Most of variables are relevant for two groups of countries following bargaining regimes. For example, being a male supposes a higher probability of getting productivity bonuses in Spain, Portugal and France. Or larger companies have a higher probability of getting productivity bonuses in the case of Spain, Portugal, France and Romania. However, we can underline that education is a relevant variable for Finland and Spain, age only for Finland and collective agreement for Finland, Spain and Portugal. So, in the cases of these variables, if we put Portugal, with an intermediate bargaining regime, together with more centralized countries, we can observe some kind of pattern.

3.4.1.4 Profit sharing

In this case, we've got information for four of the six countries: Portugal, France, Romania and Poland. We do not have information about profit sharing in Finland and in Spain.

For profit-sharing premiums, in the case of individual factors, gender is a relevant variable for four countries, but has a different interpretation. In Portugal and in Poland males have a higher probability of earning profit sharing, unlike France and Romania. Education is a relevant variable for Portugal, France and Poland, but with a lower probability. Age is a statistically significant variable for Romania and Poland: older people have higher probability to get profit sharing in Romania and have decreasing probability in Poland. Seniority is relevant for all countries as in previous kind of bonuses. And some types of occupation influence profit-sharing premiums in Poland and in Portugal (decreasing probability).

In terms of workplace factors, those with fulltime workday and indefinite contract are workplaces with higher probability of earning profit-sharing premiums. And this situation is relevant for Portugal and France in the case of workday and for France and Romania in the case of contracts.

With the establishment factor, we have to underline that sectors and activities are much more relevant variables for profit sharing than in the case of productivity bonuses, regular bonuses or all bonuses. Companies belonging to some industries have higher probabilities to get profit sharing premiums and we can find some common pattern in all 4 analyzed countries: publishing and printing, sale, maintenance and repair of motor vehicle, real State activities, other business activities, manufacture of coke and financial intermediation. Or a common pattern in three countries: manufacture of office machinery, retail trade, mining, manufacture of other non-metallic mineral products, manufacture of basic metals and electricity, gas and water supply.

In four countries the probability of earning profit sharing is higher in larger companies. And finally, in Portugal and Romania, market and companies with enterprise collective agreements are relevant variables.

Table 20.3⁵⁷ Profit-sharing premiums 2002 (marginal effects)

MARGINAL EFFECTS PROFIT SHARING BONUSES 2002	PORTUGAL	FRANCE	ROMANIA	POLAND
INDIVIDUAL FACTORS				
Male	0.0127*** (0.00228)	-0.0170*** (0.00372)	-0.00376** (0.00115)	0.00151*** (0.000380)
Shtycletereduc	0.0308*** (0.00777)	0.0486*** (0.00646)	-0.00185 (0.00610)	
Bachemasteduc	0.00591 (0.00520)	0.0563*** (0.00674)	0.00624 (0.00569)	0.00832*** (0.000964)
age5059	0.0113 (0.0119)	0.0356 (0.0218)	0.0233*** (0.00517)	-0.0120*** (0.000993)
Seniority	0.00875*** (0.000450)	0.0114*** (0.000598)	0.00711*** (0.000186)	0.00265*** (0.0000626)
physicalenginasprof1	-0.0164 (0.00930)	0.209* (0.0940)	-0.00832 (0.0145)	0.0409*** (0.00837)
WORKPLACE FACTORS				
Partialtimewd	-0.0409*** (0.00688)	-0.0402*** (0.00483)	-0.00927 (0.00611)	
Temporaryc	-0.00291 (0.00402)	-0.127*** (0.00872)	-0.0227*** (0.00373)	
ESTABLISHMENT FACTORS				
Publishing, Printing	0.0493*** (0.0109)	0.0590** (0.0200)	0.0727*** (0.00867)	0.0475*** (0.00259)
Sale, maintenance and repair of motor vehicle	0.0805*** (0.00896)	0.137*** (0.0167)	0.0572*** (0.00372)	0.0107*** (0.00258)
Retail trade	-0.0142 (0.00982)	0.222*** (0.0171)	0.0104** (0.00332)	0.0145*** (0.00268)
Real estate activities	0.0358** (0.0114)	0.0953*** (0.0168)	0.0630*** (0.00446)	0.0328*** (0.00239)
Mining and quarrying	-0.0148 (0.00778)	0.234*** (0.0240)	0.0336*** (0.00404)	0.0308*** (0.00239)
Manufacture of other non-metallic mineral products	0.0117 (0.00920)	0.260*** (0.0222)	0.0441*** (0.00420)	0.0187*** (0.00269)
Manufacture of basic metals and fabricated metal products	-0.0103 (0.00715)	0.125*** (0.0174)	0.0114*** (0.00263)	-0.0481*** (0.00418)
Electricity, gas and water supply		0.465*** (0.0187)	0.0881*** (0.00448)	0.0233*** (0.00238)
Financial intermediation	0.317*** (0.0142)	0.353*** (0.0167)	0.311*** (0.00889)	0.0656*** (0.00242)
size250m	0.0633*** (0.00327)	0.466*** (0.00307)	0.0695*** (0.00149)	0.0431*** (0.000584)
Eumarket	0.0468*** (0.00479)		0.0269*** (0.00203)	
Enterpriseca	0.0329*** (0.00623)		0.0110*** (0.00169)	
N	62586	121178	210384	634465
Pseudo R-Squared	0.43	0.21	0.18	0.16
Percent correctly predicted	92.92%	71.65%	91.66%	95.80%
Standard errors in parentheses				
* p < 0.05, ** p < 0.01, *** p < 0.001				

Source: own elaboration

⁵⁷ For complete information see appendice B

Table 21.3 shows a summary of the results for the most important variables which have a relevant influence on the higher probability of getting profit sharing premiums .

Table 21.3 Statistically significant coefficients for profit sharing premiums 2002

	PORTUGAL Barg.regime 3	FRANCE Barg.regime 2	ROMANIA Barg.regime 2	POLAND Barg.regime 1
<i>Individual factors</i>				
Gender	X	X	X	X
Education	X	X		
Age			X	X
Seniority	X	X	X	X
Occupation	X			X
<i>Workplace factors</i>				
Workday	X	X		
Contract		X	X	
Supervisory				
<i>Establishment factors</i>				
NACE	X	X	X	X
Size	X	X	X	X
Market	X		X	
Control	X	X	X	X
Col.Agreement	X		X	

Source: own elaboration

As in the case of productivity bonuses, in the case of profit sharing, is difficult to find any pattern of different countries connected with their bargaining regime. Most variables are relevant for all four countries with different levels of bargaining regimes.

Summarizing, we can obtain the following tables:

Table 22.3 Summarizing relevant variables for individual factors

	FINLAND Barg.regime 5	SPAIN Barg.regime 4	PORTUGAL Barg.regime 3	FRANCE Barg.regime 2	ROMANIA Barg.regime 2	POLAND Barg.regime 1
All bonuses	Age	gender,		gender, education, occupation,	gender, education, occupation,	gender, education, occupation,
Regular bonuses	Age	gender,		gender, education, occupation,	gender, education, occupation,	gender, education, occupation,
Productivity bonuses	education, age,	gender, education,	gender,	gender,	age,	
Profit-sharing premium			gender, education, occupation	gender, education	Gender	gender, occupation

Source: own elaboration from regression results

Table 23.3 Summarizing relevant variables for workplace and establishment factors

	FINLAND Barg.regime 5	SPAIN Barg.regime 4	PORTUGAL Barg.regime 3	FRANCE Barg.regime 2	ROMANIA Barg.regime 2	POLAND Barg.regime 1
All bonuses	control, contract, NACE	market, collective agreement, workday, contract		size, control, workday, contract, NACE	size, control, market, collective agreement, workday, contract, NACE	size, control, NACE
Regular bonuses	control, contract, NACE	market, collective agreement, workday, contract		size, control, workday, contract, NACE	size, control, market, collective agreement, workday, contract, NACE	size, control, NACE
Productivity bonuses	control, collective agreement, workday, contract, NACE	control, market, collective agreement, workday, contract, NACE	size, control, market, collective agreement, workday, contract, NACE	size, control, workday, contract, NACE	control, market, collective agreement, contract, NACE	
Profit sharing premium			workday,NACE, size, control, market, collective agreement	workday, contract,NACE, size, control	contract,NACE, size, control, market, collective agreement	NACE, size, control,

Source: own elaboration from regression results

From tables 22.3 and 23.3, we can conclude that in countries with more centralized bargaining regimes the probability of earning bonuses is higher depending only on a few variables in the case of all bonuses or regular bonuses and is dependent on a number of variables in the case of productivity bonuses and profit sharing. Conversely, in countries with more decentralized

bargaining regimes the probability of earning bonuses is higher depending on a large group of variables in the case of all bonuses and regular bonuses and is higher depending on fewer variables in the case of productivity bonuses and profit-sharing premiums.

Differentiation between centralized bargaining regimes countries and decentralized bargaining regimes countries is much more evident for individual factors. For workplace and establishment factors, it should be stressed that variables like size and control are always relevant, in the case of decentralized bargaining regimes countries.

3.5 Analysis from the SES 2006

As explained above, in the SES 2006 it is not possible to get the break down of annual bonuses in regular bonuses, productivity bonuses and profit sharing premium. As a referential variable, we only have “Annual bonuses” (variable 4.1.1) which includes all kinds of bonuses.

Table 24.3 Bargaining regimes (SES 2006)

FINLAND (FI) (308,162 observ.)	SPAIN (ES) (235,272observ.)	PORTUGAL (PT) (104,643observ.)
%observ. 98% national CA 1.2% enterprise CA 0.8% no CA <i>ICTWSS-Eurofound Bargaining regime: 5</i>	%observ. 36.7% industry CA 43.7% individual industries in individual regions CA level 17.5% enterprise CA 1.74% local unit CA <i>ICTWSS-Eurofound Bargaining regime: 4</i>	%observ. 27.14% national CA 10.1% industry CA 6% individual industries in individual regions CA level 10.9% enterprise CA <i>ICTWSS-Eurofound Bargaining regime: 3 (intermediate)</i>
FRANCE (FR) (113,641 observ.)	ROMANIA(RO) (259,140 observ.)	POLAND (PL) (652,688 observ.)
%observ. 67% industry CA 9.2% individual industries in individual regions CA level 1.4% enterprise CA <i>ICTWSS-Eurofound Bargaining regime: 2 (intermediate)</i>	%observ. 21.72% national CA 5.6% industry CA 0.57% individual industries in individual regions CA level 68.7% enterprise CA <i>ICTWSS-Eurofound Bargaining regime: 2 (intermediate)</i>	%observ. 2.9% national CA 97% enterprise CA <i>ICTWSS-Eurofound Bargaining regime: 1 (rather decentralized)</i>

Table 25.3 Wage structure (SES 2006)

FINLAND (FI) (308,162 observ.)	SPAIN (ES) (235,272observ)	PORTUGAL (PT) (104,643obv)
Wage structure (average): Gross annual wage= 29,983€ Bonuses = 1,972.7€ Gross annual earnings Weightbonuses= 6%	Wage structure (average): Gross annual wage =19,547.45€ Bonuses = 3,219.66€ Gross annual earnings Weightbonuses= 14.6%	Wage structure (average): Gross annual wage=17,732 € Bonuses = 2,842.4€ Gross annual earnings Weightbonuses= 15.3 %
FRANCE (FR) (113,641 observ)	ROMANIA (RO) (259,140 obsv.)	POLAND (PL) (652,688 obsv.)
Wage structure (average): Gross annual wage=36,224.75 € Bonuses =2,548.6 € Gross annual earnings Weightbonuses= 5.4%	Wage structure (average): Gross annual wage=4122,3 € Bonuses = 105.45€ Gross annual earnings Weightbonuses= 4.15%	Wage structure (average): Gross annual wage=8,102.7 € Bonuses =118.05 € Gross annual earnings Weightbonuses= 1.65%

Source: Own elaboration from Visser (2013), Data Base on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts, 1960-2011 (ICTWSS) and SES (2002) Eurofound Database

From table 24.3, can be seen the bargaining regimes for every country in 2006 are the same as those for 2002. However, the percentage of different collective agreements in every sample is not the same if we make a comparison between 2002 and 2006. For example, in the case of Finland, in the SES 2002 dataset, the percentage of observations with enterprise collective agreement was only 0.13% and in the SES 2006 dataset it is 3.6%. Or, in the case of France, in the SES 2002 dataset, most of observations show national collective agreement (94.1%) and in the SES 2006 dataset we find 67% of the observations with industry collective agreements and 1.4% with enterprise collective agreements.

In table 25.3, if we look at the weight of total bonuses in gross annual earnings, we find the same pattern as in the SES 2002 dataset: Spain and Portugal are the two countries with a higher weight of total bonuses in gross annual earnings (14.6% and 15.3% respectively). The problem is that, in the SES 2006 dataset, is not possible to break down all bonuses into regular and non-regular. Because, in Spain and in Portugal, the weight of regular bonuses in total gross annual earning is greater than in the rest of countries; and that is the reason why the weight of all bonuses in gross annual earnings is greater as well.

3.5.1 Results from the SES 2006

With the SES 2006 information, we only have information from five countries. It is not possible to get information from Portugal, because bonuses could be observed in 100% of the sample.

Looking at the results from the SES 2006, we can see some common patterns and some changes with respect to the results for annual bonuses from the SES 2002. In terms of individual factors, gender appears as a relevant variable for Finland (although showing a low probability) and it remains a relevant variable for Romania and Poland. Probability of earning bonuses is higher for more highly educated people in France and Poland, and in the SES 2006 we have to add Spain; unlike Finland where education does not play a positive role in earning bonuses. In the case of Finland, age is a relevant variable in the SES 2002, and also in the case of Poland, but with a lower probability. Only a few kinds of occupation are relevant in Finland, Romania and Poland. And finally in all countries people with higher seniority and for, workplace factors, full-time workdays and indefinite contract have a higher probability to get bonuses.

Workers from companies belonging to some sectors in France, Romania and Poland have a higher probability of earning bonuses: manufacture of office machinery, supporting and auxiliary transport activities, manufacture of coke or manufacture of transport equipment. This probability is higher for larger companies, especially in the case of France and Romania and for private companies in Finland and Spain. And individual industries in individual regions collective agreement is a statistically significant variable for Spain, France and Romania in a positive way, and as enterprise collective agreement only in the case of Spain.

Table 26.3⁵⁸ Annual Bonuses 2006 (marginal effects)

MARGINAL EFFECTS ANNUAL BONUSES 2006	FINLAND	SPAIN	FRANCE	ROMANIA	POLAND
INDIVIDUAL FACTORS					
Male	0.00451*** (0.00106)	0.00275* (0.00140)	-0.0120** (0.00399)	-0.0114*** (0.00251)	-0.00655*** (0.000668)
Shtycletereduc	-0.00785*** (0.00176)	0.0311*** (0.00230)	0.0786*** (0.00903)	0.0400** (0.0132)	0.0127*** (0.00180)
Bachemasteduc	-0.0145*** (0.00177)	0.0250*** (0.00240)	0.0676*** (0.00911)	0.0479** (0.0149)	0.0200*** (0.00195)
Doctoraleduc	-0.0695*** (0.00576)	-0.0662*** (0.0134)	0.00785 (0.0170)	0.0768*** (0.0138)	0.0254*** (0.00174)
age3039	0.160*** (0.00799)	0.00726 (0.00498)	0.0844** (0.0327)	0.0105 (0.0127)	0.0402*** (0.00264)
age5059	0.153*** (0.00808)	-0.00327 (0.00524)	0.0315 (0.0330)	0.0154 (0.0129)	0.0493*** (0.00269)
age60more	0.185*** (0.00818)	-0.00689 (0.00607)	0.0151 (0.0350)	-0.0443** (0.0151)	0.0490*** (0.00312)
Seniority	0.0207*** (0.000152)	0.00420*** (0.000228)	0.00622*** (0.000612)	0.0159*** (0.000432)	0.00387*** (0.000122)
skillagricultfishery1	0.0238*** (0.00551)		0.0229 (0.225)	-0.0721** (0.0249)	0.0754*** (0.0203)
WORKPLACE FACTORS					
Temporaryc	-0.0853*** (0.00190)	-0.0238*** (0.00160)	-0.184*** (0.00832)	-0.161*** (0.00762)	-0.0261*** (0.000725)
ESTABLISHMENT FACTORS					
Manufacture of office machimery, computers	0.000168 (0.00840)	-0.00801 (0.00553)	0.0843*** (0.0188)	0.0950*** (0.0106)	0.0889*** (0.00966)
Supporting and auxiliary transport activities	-0.00122 (0.00836)	-0.0265*** (0.00559)	0.110*** (0.0199)	0.0435*** (0.0113)	-0.00881 (0.00525)
Manufacture of food, products, beverages and tobacco	-0.00168 (0.00842)	-0.0541*** (0.00517)	0.142*** (0.0185)	-0.131*** (0.00957)	-0.0137* (0.00537)
Manufacture of coke, refined petroleum	-0.0981*** (0.0100)	-0.00986* (0.00490)	0.197*** (0.0178)	0.0358*** (0.0107)	0.0245*** (0.00561)
Manufacture of transport equipment	-0.0107 (0.00910)	-0.00878 (0.00536)	0.0708*** (0.0183)	0.0427*** (0.0109)	0.0130* (0.00579)
Public administration and defence	-0.0495*** (0.00849)		0.236*** (0.0174)	-0.0355** (0.0108)	0.425*** (0.00683)
size50249	0.0153*** (0.00201)	0.0181*** (0.00158)	0.210*** (0.00556)	0.130*** (0.00267)	-0.0864*** (0.00159)
size250m	0.0336*** (0.00186)	0.0249*** (0.00158)	0.311*** (0.00504)	0.284*** (0.00285)	-0.171*** (0.00190)
privatectrl	0.0139*** (0.00138)	0.0151*** (0.00302)	-0.0769*** (0.0108)	-0.368*** (0.00400)	-0.225*** (0.00199)
indindustregca		0.0205*** (0.00137)	0.0303*** (0.00632)	0.0741*** (0.0131)	
enterpriseca	-0.0151** (0.00502)	0.0232*** (0.00183)	-0.0613*** (0.0142)	-0.0209*** (0.00366)	-0.0165*** (0.00170)
N	308153	235241	113641	259140	652660
Pseudo R-Squared	0.26	0.068	0.24	0.21	0.65
Percent correctly predicted	88.53%	90.43%	75.17%	74.01%	92.99%
Standard errors in parentheses					
* p < 0.05, ** p < 0.01, *** p < 0.001					

⁵⁸ For complete information see appendice B

Table 27.3 shows a summary of the results for the most important variables which have relevant influence on the higher probability of getting annual bonuses.

Table 27.3 Statistically significant coefficients for annual bonuses 2006

	FINLAND Barg.regime 5	SPAIN Barg.regime 4	PORTUGAL Barg.regime 3	FRANCE Barg.regime 2	ROMANIA Barg.regime 2	POLAND Barg.regime 1
<i>Individual factors</i>						
Gender	X+				-X	-X
Education		X+		X+		X+
Age	X+					X+
Seniority	X+	X+		X+	X+	X+
Occupation	X+				X+	-X
<i>Workplace factors</i>						
Workday	-X	-X		-X	-X	-X
Contract	-X	-X		-X	-X	-X
Supervisory						
<i>Establishment factors</i>						
NACE				X+	X+	X+
Size	X+	X+		X+	X+	
Market						
Control	X+	X+		-X	-X	-X
Col.Agreement		X+		X	X	

Source: own elaboration

3.6 Analysis from SES 2010

In Table 28.3, we can observe two main changes in comparison with information from the SES 2002 and the SES 2006. Firstly, classification of bargaining regimes in Finland has changed from number 5 (rather centralized) to number 3 (intermediate). And secondly, Romania's position has changed from number 2 (intermediate) bargaining regime to number 3 (intermediate). So, Finland has changed its bargaining regime, from centralized to much more decentralized level, and Romania has changed its bargaining regime (although keeping the same denomination), from decentralized level to much more centralized level. In the SES 2002, most of observations in Romania show enterprise collective agreements, and from the SES 2006 and SES 2010 we can

observe other types of collective agreement: like national collective agreements and industry collective agreement.

In the case of Spain, if we compare the situation with information from the SES 2002, with the SES 2006 we can remark the increase in the percentage of observations with industry collective agreements and with individual industries in individual regions. But this trend of a relative centralization in collective agreement has been changed, if we have a look SES 2010: we have to underline the reduction in the percentage of observations with industry collective agreements and with individual industries in individual regions, and the increase in percentage of observations with enterprise collective agreements.

In the case of France, the trend for much more decentralized bargaining regimes, which begins in the SES 2006, continues in the SES 2010 with different kinds of collective bargaining (instead of national collective agreements): industry, individual industries in individual regions and enterprise collective agreements. According to Table 29.3, countries undergoing the decentralization of collective bargaining show a lower weight of bonuses from gross annual earnings, in comparison with the situation in the SES 2006 and SES 2002. That is the situation for Finland and Spain. In the case of France, the weight of bonuses in the SES 2006 decreases from that in the SES 2002, but in the SES 2010 this weight has increased from the situation in the SES 2006; however, if we compare the SES 2002 and SES 2010, we can observe a decrease in the weight of bonuses (from 12% to 9%).

Table 28.3 Bargaining regimes (SES 2010)

FINLAND (FI) (315,803 observ.)	SPAIN (ES) (216,769observ.)	PORTUGAL (PT)(120,766 observ.)
<p>%observ. 98.27,% national CA 0.93% enterprise CA</p> <p>ICTWSS-Eurofound Bargaining regime: 3</p>	<p>%observ. 29.8% industry CA 35.5% individual industries in individual regions CA level 22.9% enterprise CA 3.7% local unit CA</p> <p>ICTWSS-Eurofound Bargaining regime: 4</p>	<p>%observ. 27.5% national CA 17.2% industry CA 8% individual industries in individual regions CA level 11.5% enterprise CA</p> <p>ICTWSS-Eurofound Bargaining regime: 3 (intermediate)</p>
FRANCE (FR) (220,369 observ.)	ROMANIA (RO) (278,270 observ.)	POLAND (PL) (681,761 observ.)
<p>%observ. 5.3% industry CA 65.18% individual industries in individual regions CA level 11.4% enterprise CA</p> <p>ICTWSS-Eurofound Bargaining regime: 2 (intermediate)</p>	<p>%observ. 20.75% national CA 5.2% industry CA 0.98% individual industries in individual regions CA level 68.8% enterprise CA</p> <p>ICTWSS-Eurofound Bargaining regime: 3 (intermediate)</p>	<p>%observ. 5% national CA 41% enterprise CA</p> <p>ICTWSS-Eurofound Bargaining regime: 1 (rather decentralized)</p>

Source: own elaboration from SES database

Table 29.3 Wage structure (SES 2010)

FINLAND (FI) (315,803observ.)	SPAIN (ES) (216,769observ)	PORTUGAL (PT) (120,766 observ)
<p>Wage structure (average): Gross annual wage= 35,032.93€ Bonuses = 1887.84€</p> <p>Gross annual earnings Weightbonuses= 4.9%</p>	<p>Wage structure (average): Gross annual wage =24,683.68€ Bonuses = 3,452.91€</p> <p>Gross annual earnings Weightbonuses= 11.8%</p>	<p>Wage structure (average): Gross annual wage=17,541 € Bonuses = 2,773,7.4€</p> <p>Gross annual earnings Weightbonuses=14.6 %</p>
FRANCE (FR) (220,369 observ)	ROMANIA (RO) (278,270 observ.)	POLAND (PL) (681,761 observ.)
<p>Wage structure (average): Gross annual wage=33,322.15 € Bonuses =3,400.9 €</p> <p>Gross annual earnings Weightbonuses=9%</p>	<p>Wage structure (average): Gross annual wage=5611,8 € Bonuses = 302.6€</p> <p>Gross annual earnings Weightbonuses=3.7%</p>	<p>Wage structure (average): Gross annual wage=10,130 € Bonuses =794.8 €</p> <p>Gross annual earnings Weightbonuses=6.7%</p>

Source: own elaboration from SES database

3.7.1 Results from the SES 2010

As with the SES 2006, with the SES 2010 we only have information from five countries, because in Portugal bonuses could be observed in 100% observations.

Table 30.3 shows that, in the case of individual factors, for gender there is the same pattern as the SES 2002. This variable is relevant for Spain, France, Romania and Poland: in the case of France, Romania and Poland if a worker is female she will have a higher probability of earning bonuses, unlike in Spain where this probability is higher when a worker is a male. In terms of education, this is a relevant variable for Finland, Spain, France, Romania and Poland; so, unlike previous years, for all countries this is a statistically significant variable. And for Finland age is an important variable in influencing the probability of earning bonuses. Seniority is, as in previous years, a relevant variable for all countries as are some kinds of occupation.

In the case of workplace factors, for variables like workday and contract, the trend is the same in the SES 2002 and SES 2006: full-time workdays and indefinite contracts are where the probability of earning bonuses is higher. Moreover, in the SES 2010, seniority becomes a statistically significant variable in the case of Romania.

Regarding establishment factors, type of industry is a relevant variable for all countries. And employees in larger companies have higher probability of getting bonuses in Spain, France, Romania and Poland. Finally, the type of collective bargaining is a relevant variable, to some extent, for all countries, but the highest probability can be found in France.

Table 30.3⁵⁹ Annual Bonuses 2010 (marginal effects)

MARGINAL EFFECTS ANNUAL BONUSES 2010	FINLAND	SPAIN	FRANCE	ROMANIA	POLAND
INDIVIDUAL FACTORS					
Male	0.00183 (0.00101)	0.0104*** (0.00221)	-0.0145*** (0.00227)	-0.0143*** (0.00240)	-0.00954*** (0.00157)
shtcycletereduc	0.0368*** (0.00202)	0.0258*** (0.00409)	0.0342*** (0.00493)	0.0576*** (0.0172)	0.0130*** (0.00388)
bachemasteduc	0.0347*** (0.00193)	0.0294*** (0.00409)	0.0307*** (0.00497)	0.122*** (0.0168)	0.0260*** (0.00347)
age5059	0.118*** (0.00742)	0.000154 (0.0154)	0.00265 (0.0234)	-0.00872 (0.0244)	-0.0316* (0.0128)
age60more	0.138*** (0.00750)	0.00373 (0.0159)	0.00588 (0.0238)	-0.0276 (0.0252)	-0.0692*** (0.0134)
seniority	0.0184*** (0.000144)	0.0113*** (0.000344)	0.00432*** (0.000361)	0.0134*** (0.000418)	0.0101*** (0.000242)
businessadminprof	0.241*** (0.0131)	0.0913*** (0.0216)	0.00301 (0.0115)	0.241*** (0.0212)	0.0579*** (0.00560)
Stationaryplant	0.258*** (0.0133)	0.0740*** (0.0219)	0.0486*** (0.0125)	0.193*** (0.0218)	0.105*** (0.00584)
WORKPLACE FACTORS					
Temporaryc	-0.101*** (0.00204)	-0.0522*** (0.00263)	-0.153*** (0.00451)	-0.0861*** (0.00720)	-0.0262*** (0.00171)
Yesupervisory		-0.00867** (0.00284)	-0.00410 (0.00320)	0.0859*** (0.0213)	
ESTABLISHMENT FACTORS					
Manufacture coke and petroleum	-0.00798 (0.00441)	0.0586*** (0.00649)	0.0129 (0.00785)	0.167*** (0.00856)	0.129*** (0.00501)
Electricity, gas, steam supply	0.0128** (0.00432)	0.0180* (0.00841)	0.127*** (0.00647)	0.171*** (0.00873)	0.283*** (0.00503)
Mining and quarrying	-0.0212 (0.0116)	0.0000207 (0.0102)	0.0406*** (0.0122)	0.183*** (0.0104)	0.447*** (0.00439)
Public administ. and defence	-0.0205*** (0.00373)	-0.179*** (0.00871)	0.0708*** (0.00668)	0.204*** (0.00734)	0.503*** (0.00383)
size50249	-0.00327* (0.00162)	0.0981*** (0.00319)	0.249*** (0.00407)	0.148*** (0.00243)	0.100*** (0.00183)
size250m	-0.000839 (0.00144)	0.108*** (0.00303)	0.334*** (0.00389)	0.286*** (0.00267)	0.101*** (0.00185)
Privatectl	0.00960*** (0.00120)	-0.0986*** (0.00310)	0.0347*** (0.00358)	-0.303*** (0.00382)	-0.189*** (0.00207)
Enterpriseca	0.0270*** (0.00331)	0.0215*** (0.00285)	0.799*** (0.00767)	-0.0712*** (0.00288)	0.0347*** (0.00323)
Localunitca		0.0368*** (0.00534)			
N	315802	216769	220369	278270	681756
Pseudo R-Squared	0.26	0.096	0.24	0.19	0.24
Percent correctly predicted	89.10%	77.24%	80.07%	72.78%	72.19%
Standard errors in parentheses					
* p < 0.05, ** p < 0.01, *** p < 0.001					

⁵⁹ For complete information see appendice B

Table 31.3 Statistically significant coefficients for annual bonuses 2010

	FINLAND Barg.regime 5	SPAIN Barg.regime 4	PORTUGAL Barg.regime 3	FRANCE Barg.regim e 2	ROMANIA Barg.regime 2	POLAND Barg.regime 1
<i>Individual factors</i>						
Gender		X+		-X	-X	-X
Education	X+	X+		X+	X+	X+
Age	X+					
Seniority	X+	X+		X+	X+	X+
Occupation	X+	X+		X+	X+	X+
<i>Workplace factors</i>						
Workday	-X	-X		-X	-X	-X
Contract	-X	-X		-X	-X	-X
Supervisory		-X			X+	
<i>Establishment factors</i>						
NACE	X	X		X	X	X
Size		X		X	X	X
Market						
Control	X			X		
Col.Agreement	X	X		X	X	X

Source: own elaboration

3.7 Conclusions

In order to summarize the main results, can be explained that comparing the situation with information from the SES 2002, SES 2006 and SES 2010, according to which some countries have changed their collective bargaining regime from much more centralized positions to much more decentralized positions, the probability of earning bonuses depends on a growing number of variables. In centralized bargaining regimes, some bonuses only depend on a few variables, because in those situations some bonuses are included in agreements. But as bargaining regimes become much more decentralized, then in each country bonuses will depend on a larger number of variables, because bonuses in these situations they are not included in collective agreements.

So, in the SES 2002, it was easier to find a pattern of variables with a higher influence on the probability of earning bonuses connected with the type of bargaining regime. But with information from the SES 2006 and SES 2010 this pattern is much more difficult to identify. If we compare the information from the SES 2002 and SES 2010, the scheme is similar for some variables but

most variables are relevant for many more countries in the SES 2010 than in the SES 2002.

Summarizing as a whole and taking into account the information from all countries, the probability of earning bonuses is higher for people with good levels of education, with seniority, for certain kinds of occupation, for full-time workdays, indefinite contracts, for larger companies in certain sectors. In fact, these kinds of industries or sectors are especially relevant for profit sharing premiums.

All these results would be consistent with papers like Pendleton (Pendleton et al, 2009). But other results for some variables could be much more ambiguous. For example, in the case for gender, results show that, in countries like France, Romania and Poland, females have a higher probability of earning bonuses and in Spain, Portugal and Finland they are males who have higher probability of earning bonuses. This is the results for annual bonuses, but is different in the case of productivity bonuses: where, for Spain, Portugal and France, males have a higher probability of earning this kind of bonus. Age is an important variable mainly for Finland: older people have a higher probability of getting bonuses. In the case of company ownership, in most of countries the higher probability is for public companies: only for Finland, the probability is higher in private companies. Market type is a statistically significant variable for Romania in a positive way and for Spain in a negative way. Collective agreement has become a relevant variable for more countries if we compare the situation in the SES 2010 with the situation in the SES 2002: especially in the case of enterprise collective agreements.

CHAPTER 4

VARIABLE PAY: WAGE DETERMINATION AND WAGE INEQUALITY

If workers are more insecure, that's very 'healthy' for the society, because if workers are insecure, they won't ask for wages, they won't go on strike, they won't call for benefits; they'll serve the masters gladly and passively. And that's optimal for corporations' economic health.

Noam Chomsky

4.1 Introduction⁶⁰

The aim of this chapter is to analyze the impact of Variable Pay Systems in wage determination and in wage inequality, in the case of the same six European countries from chapter 3: Finland, Spain, Portugal, France, Romania and Poland. We use data from SES (Structure of Earning Survey) to carry out our econometric analysis, which offers a cross-sectional dataset and includes matched employer-employee microdata.

According to literature, Variable Pay or Pay for performance, supposes additional components to regular wages in order to improve productivity or motivation workers. But our first conclusions indicate that, in some cases, these remuneration systems could be a variable which worsens the wage distribution and which contributes to grow wage inequality.

4.2 Motivation

European Company Survey (2013) (Eurofound, 2015) showed that the 63% of European analyzed establishments used some kind of Variable pay systems. These schemes of variable remuneration have had a growing importance over last years, as different papers show us (Pendleton A., Whitfield K. Bryson A., 2000).

These forms of variable remuneration are important for different reasons. On the one hand, because their growing importance in the collective agreements.

⁶⁰This research project is part of the Department of Economic Policy and World Economic Structure research project of UB called "Analysis and evaluation of public policies" ECO2012-38004 from Spanish Ministry of Economy and Finance. Eurostat-Research Proposal 53/2015-SES)

On the other hand, because, although they could be considered as a type of labor demand factor, connected for example with the evolution of the firm objectives, some of them are connected with the evolution of the individual features and productivity. Some literature justifies the introduction of Variable Pay Systems with the improvement in productivity, because of their connection with motivation workers. But the purpose of this paper is to analyze if this good effect on productivity goes with an increase in wage inequality.

So our research question is: using variable pay or pay for performance suppose more or less wage inequality?

4.3 Literature review and contribution

4.3.1 Contribution

There are some literature that analyzes which factors are most relevant in wage determination like Palacio and Simón, 2002. And other literature which focuses on the analysis of the wage inequality through, for example, decomposition of individual variance (Palacio and Simón, 2004), or Fields decomposition (Simón, 2009). Lemieux, 2007 introduce Variable Pay System into the analysis of wage inequality, taking data from Panel Study of Income Dynamics. The main contribution of this chapter is to introduce Variable Pay System to all theses previous analysis, using three last waves of SES.

4.3.2 Wage determination

Wages determination is a recurrent issue in Labor Economics (Katz y Autor, 1999). From neoclassical competitive model of labor market, wages are determined by worker productivity level (marginal productivity labor). This statement would have connection with the neoclassical theory of distribution which tells us that the remuneration of production factors is equal to its marginal productivity. So, in the determination of wage levels labor supply factors should be predominant, while labor demand factors would play a minor role or no role (Reder, 1962). Moreover, following this model, workers with similar productivity levels should receive the same wages, regardless of where they work. (Palacio y Simón, 2004).

This approach is connected with human capital theory (Becker, G, 1964) (Schultz T., 1960) (Mincer, J.1958)⁶¹ and, according to which, wages depend on education level, experience or seniority, for example (labor supply factors). Also, age or gender can be included.

We could find this individual point o view of the wage determination in Industrial Relations field. Here, wages would be “pay for the person” = base pay ex ante productivity + additional pay-worker's productivity (Lemieux et al, 2007) and we have to talk about an individual variable pay, connected with individual level of productivity, results or individual performance (merit pay).

However, we can find a lot of examples about the difficulty of companies to pay people according to their marginal production (Kerr S., 1975).⁶²

And different empirical evidence shows that labor demand factors offer us a better explanation of wage inequality in developed countries than labor supply factors: in the case of inter-industry wage differences, Groshen (1991b) or Jaumandreu (1994)⁶³. These labor demand factors are connected with establishment features like: size, ownership, market, industry, etc. So, wages determination will be influenced by other components different from individuals (Palacio J.I., Simón H., 2004).

On the one hand, wages are “attached to jobs”, because compensation is determined by the characteristics of the job or workplace (Lemieux, T. et al. 2007), like type of workday or responsibility level. Here variable pay would be a collective performance pay connected with collective productivity or performance or with team work. On the other hand, wages would be “attached to company or factory features”, like ownership, company size, industry, market, industrial relation regulations (labor demand factors). In this case we are in front of a collective performance pay, linked to company productivity, company results or company performance (profit related pay or bonuses, share ownership schemes).

So, theories and authors explain that the wage determination goes further market supply factors and market demand factors from labor market. Institutional aspects and social actors, like trade unions and employer organizations, have to be taken into account, because wage determination is

⁶¹ See Laroche M, Mérette M., Ruggeri GC (1998-01)

⁶² See Lemieux, T, Bentley MacLeod W., Parent D. (2007)

⁶³ See Palacio y Simón (2004)

done through collective bargaining but not in a competitive market. This is the point of view of the Industrial Relations (Pendleton A. et al, 2009) analysis and the some authors of Labor Economics (Pérez Trujillo M., Ruesga S. et al, 2009).

4.3.3. Wage Inequality

One dimension of inequality is income inequality and it refers to the inequality of the distribution of individuals, household or some per capita measure of income⁶⁴. Lorenz Curve measures level of inequality and poverty and divergence of a Lorenz Curve for perfect equality and the Lorenz Curve of a given income Distribution is measured by some index of inequality like Gini index (Heshmati, 2004).

Analyze and understand the wage inequality is a very important issue in labor market because this is a key determinant of differences in living standards (Simón H, EES2002) and of income distribution.

Some factors which could become an explanation of wage inequality could be: individual characteristics (labor market supply point of view), workplace and establishment characteristics (labor market demand point of view) and labour market institutions. (Simón H, EES2002).

In order to assess the level of wage inequality we can find different tools. We focus in variance of logarithms and Gini Index. Moreover, if we want to determine which are the most important factors have influenced in wage inequality, we have to use some kind of inequality decomposition.

There are several approaches to inequality decomposition. Traditional methods or “a priori” methods (Cowell and Fiorio, 2010) include the decomposition by income sources (Shorrocks, 1982) and by population subgroups (Shorrocks, 1984). First method estimates the contribution of individual income components to the observed inequality and second method measure inequality both within and between subgroups of the population (Manna R. and Regoli A., 2012). Regression-based approaches go further

⁶⁴ The 1990s signified a shift in research previously focused on economic growth, its determinants. This change supposed focusing in issues of convergence or divergence of per capita incomes to the long-term equalisation or polarisation of incomes across regions and countries. (Heshmati, 2004).

including any factor (economic, social, etc) that may drive the observed inequality and can manage problems of endogeneity due to reverse causality. Regression-based decomposition methodology was introduced in 1970's (Blinder, 1973; Oaxaca, 1973). Thirty years after, Fields (Fields, 2003a) introduced a regression-based decomposition by income determinants through the extension of the decomposition by income sources (Manna R. and Regoli A., 2012).

Fields decomposition (Fields, 2003)⁶⁵

We start from an income or wage (in our case) generating function

$$\ln w = \sum_{j=1}^k b_j X_j + \varepsilon \quad (1)$$

Where w denotes wages, X_j the j -th explanatory variable, b_j its coefficient and ε the error term. The Fields method estimates the share of the log-variance of income that is attributable to the j -th explanatory factor (relative factor inequality weight) as:

$$\sum_{j=1}^k S_j \text{ FIELDS} = \frac{\hat{b}_j \cdot \text{cov}(X_j, \ln w)}{\sigma^2(\ln w)} \quad (2)$$

Where \hat{b}_j is the coefficient of the j -th explanatory factor estimated from an OLS multiple regression, $\sigma^2(\ln w)$ is the variance of the dependent variable and $\text{cov}(X_j, \ln w)$ is the covariance between the j -th factor and the dependent variable. (Manna R. and Regoli A., 2012)

In the Fields decomposition, $S_j \text{ FIELDS}$ represents the contribution of each factor to total inequality.

4.4 Methodology and data

4.4.1 Database

In this chapter, as above, the source of information is microdata from the Structure of Earnings Survey (SES) because it would be the dataset that comes closest to our needs. SES is four year survey (1995, 2002, 2006 and 2010) which offers independent cross-sectional datasets and includes matched employer-employee microdata (observations for various workers employed in each establishment). (Ramos R., Sanromà E., Simon H., 2014). We've obtained

⁶⁵ See Simón, H (2009)

the access to the microdata SES from Eurostat for different waves (2002, 2006 and 2010) and for all European countries⁶⁶.

The EES offers microeconomic information about wages of an important number of workers, about their characteristics, about workplace characteristics and about establishments characteristics.

4.4.2 Model wage determination

Our starting point is a Mincerian semilogarithmic wage equation (Mincer, 1974), where wages are determined by variables connected with human capital (HC).

$$W_{ij} = \alpha + HC_i \beta + \varepsilon_i \quad (3)$$

Where W_i is the natural logarithm of the gross hourly wage of worker i . HC_i is a vector of individual and capital human variables of worker i , including dummies variables. So, HC_i will be collecting labor supply factors.

But, in an extended way, we can include other variables (Palacio J.I, Simón H, 2004) (Lemieux, T. 2007) much more connected with labor demand factors. For example: workplace factors (WP), establishment factors (ES), fixed effects for every establishment (FE) and a proxy variable for Variable Pay schemes (VP) . And taking into account all these aspects, we can obtain the following equation (Simón H, 2009) (Marsden D, 1999):

$$W_{ij} = \alpha + HC_i \beta + WP_i \gamma + ES_i \delta + \theta_j + VP_i \varphi + \varepsilon_{ij} \quad (4)$$

W_{ij} : natural logarithm of the gross hourly wage for each worker i

HC_i : vector of human capital variables for each worker i . Dummy variables.

ES_i : vector of variables describing establishment for every worker i . Dummy variables

WP_i : vector of variables describing workplace for each worker i . Dummy variables

θ_j : fixed effects for every establishment j

VP_i : natural logarithm of the hourly bonuses for each worker i . This is a proxy variable describing Variable Pay or Pay for Performance schemes

α :intercep

⁶⁶ Eurostat-Research Proposal 53/2015-SES)

$\beta, \delta, \gamma, \varphi$: vectors of parameters to be estimated

ε_{ij} : random disturbance term

The wage equation (1) shows that we are in front of a multiple regression analysis (several independent variables), with linear relationship among parameters, where coefficients gives information about the change in dependent variable for a 1 unit change in the predictor, holding other factors fixed (*ceteris paribus*). As a regression methodology we've used OLS (ordinary least squares) in order to analyze which are the main variables influencing wage determination.

Our dependent variable is Gross Hourly Wage (natural logarithm). It is calculated dividing the gross annual wage by annual agreed working hours (both variables are from SES dataset).

Gross Hourly Wage = Gross Annual Wage⁶⁷ / agreed annual workday
($\ln hlyearning$)

Independent variables are the same used in above chapter.

*Individual factors (dummy variables with the exception of seniority): gender, education, age, seniority.

*Workplace factors (dummy variables): occupation⁶⁸, workday, contract, supervisory

*Establishment factors (dummy variables): NACE⁶⁹ classification, size, control, market, collective agreement

And, as an additional independent variable we take into account a proxy variable for Variable Pay or Pay for performance schemes and their breakdowns. Hourly Annual Bonuses (natural logarithm):

⁶⁷ Gross Annual Wage: total monetary remuneration received by workers during 2002, 2006 and 2010 respectively

Gross Annual Wage includes = base pay + complements wage + withholding taxes + Special Variables Bonuses

⁶⁸ Following ISCO-88 (COM). Annex for details

⁶⁹ Following NACE rev.1.1. Annex for details

For SES2002, SES2006 and SES2010

Hourly Annual Bonuses = Annual Bonuses⁷⁰ / agreed annual workday
(lnhlybonuses)

Only for SES2002

Hourly Regular Bonuses = Regular Bonuses⁷¹ / agreed annual workday
(lnhlyregulbon)

Hourly Productivity Bonuses = Productivity Bonuses⁷² / agreed annual workday
(lnhlyproductbon)

Hourly Profit sharing = Profit Sharing premiums⁷³ / agreed annual workday
(lnhlyprofitsbon)

In order to analyze the influence of different factors and bonuses in wages, we used a technique based on decomposition of the variance of individual wages. This technique implies the estimation of different wage equation specifications and the quantification of the variability in individual wages attributed to different factors, through changes in determination coefficient. Marginal contribution of each factor in the explanation of individual wage variability measures associated effect of this factor. (Palacio J.I., Simón H., 2004). And we applied this scheme to quantificate the variability in individual wages attributed to bonuses.⁷⁴

We've called the different specifications as model A, model B and model C.

In model A, we analyze which are the most important factors determining wages, controlling for human capital variables (gender, age, studies, seniority, occupation) and for variable pay schemes variable.

In model B, we analyzed which are the most important factors determining wages, controlling for human capital variables, workplace variables

⁷⁰ Includes any periodic, irregular, ad-hoc and exceptional bonuses and other payments that

⁷¹ Holiday bonuses, 13th and 14th month payment, allowances not taken and occasional commissions

⁷² Bonuses linked to individual performance or piecework

⁷³ Bonuses linked to the overall performance to the enterprise, under incentive schemes

⁷⁴ An alternative approach to the influence of factors (especially demand factors) in the wage determination, could be the standard deviation of the establishment fixed effects, estimated from the full specification wage equation. This deviation is a measure of wage differentiation between establishments for workers with the same observable productive characteristics (Palacio J.I., Simón H., 2004).

(occupation, workplace, contract, responsibility), establishment variables (Nace, size, market, regulation, ownership) and variable pay schemes variable.

In model C, we analyzed which are the most important factors determining wages controlling for human capital variables, workplace variables and fixed effects for establishments.

Effects establishments are not common in wage determination standard models and were used as a novelty by Palacio J.I. and Simon H (Palacio and Simon, 2004). These effects capture the impact on wages of the factors related to demand and they are used to control the heterogeneity⁷⁵ between establishments in wage determination. They could be analyzed through fixed effects or through random effects. (Palacio and Simon, 2004). Hausman test for 3 different SES waves and for 6 different countries indicates that these effects are correlated with other explanatory variables. (Hausman, 1978). For this reason, we've used fixed effects, because inappropriate use of random effects supposes inconsistent estimation of the equation parameters (Hsiao, 1985). These effects must be considered representative of the sample but not the entire population. (Greene, 1997).

As we explained before, in our dataset, we got information for 3 different SES waves for each country: 2002, 2006 and 2010. So we've got 3 cross-section independent datasets⁷⁶ but not any panel data with the observations for the same individuals through the time (Wooldridge, 2002). In this way is not possible to separate the part of establishment effects due to unobserved individual heterogeneity of obeying unobserved heterogeneity between the establishments (Palacio JI and Simon H., 2004): we can only estimate global effects. However, although control for unobservable individual fixed effects tends to reduce the magnitude of wage differentials between establishments, they persist significantly (Goux and Maurin, 1999) (Abowd et al, 1999) (Abowd et al, 2001).

⁷⁵ Differences across studied units

⁷⁶ We could go further and analyze our data set as a pooled of independent cross sections, introducing a dummy variable for every year (2002, 2006 and 2010).

4.5 Results

4.5.1 Wage determination results and explanation of wage variance through R² analysis

Through OLS regression, we analyzed wage determination for every of the 6 countries and for every SES wave, following 3 different models or specifications:

ModelA: OLS regression. HC variables

ModelB: OLS regression. HC+WP+ES variables

ModelC: Fixed effect regression. HC+WP+fixed effects establishment

The R-squared or R² (coefficient of determination) gives us information about level of regression fit to the data. But also, it gives us information about the proportion of variance in the dependent variables which can be explained by the independents variables (Wooldridge, 2002a).

In our case, we've used decomposition of wage variance through difference of the R² coefficient to see which part of this wage variance is explained by bonuses. (Palacio J.I., Simón H. , 2004).

Difference R²-R²wab (without all bonuses) = contribution of bonuses to wage variance

Difference R²-R²wrb (without regular bonuses) = contribution of regular bonuses to wage variance

Difference R²wrb (without regular bonuses)-R²wab (without all bonuses) = contribution of productivity bonuses and profit sharing premiums to wage variance

4.5.1.1 Results for the SES 2002

Table 32.4 SES 2002 Annual Bonuses Model A, Model B and Model C

COEFFICIENTS	FINLAND	SPAIN	PORTUGAL	FRANCE	ROMANIA	POLAND
ANNUAL BONUSSES						
VARIABLE PAY SCHEMES						
Inhlybonuses MODEL A	0.271***	0.396***	0.677***	0.271***	0.276***	0.521***
	<i>(0.00201)</i>	<i>(0.00172)</i>	<i>(0.00215)</i>	<i>(0.00182)</i>	<i>(0.00259)</i>	<i>(0.00308)</i>
R ²	0.489	0.689	0.892	0.640	0.585	0.743
R ² wab ⁷⁷	0.25	0.47	0.48	0.39	0.31	0.40
Difference R2- R2 wab	0.239	0.219	0.412	0.25	0.275	0.343
Inhlybonuses MODEL B	0.242***	0.336***	0.637***	0.229***	0.224***	0.452***
	<i>(0.00233)</i>	<i>(0.00183)</i>	<i>(0.00267)</i>	<i>(0.00199)</i>	<i>(0.00259)</i>	<i>(0.00274)</i>
R ²	0.568	0.750	0.906 ⁷⁸	0.715	0.661	0.839
R ² wab	0.41	0.62	0.62 ⁷⁹	0.56	0.46	0.58
Difference R2- R2 wab	0.158	0.13	0.286	0.155	0.201	0.259
Inhlybonuses MODEL C		0.356***	0.662***	0.285***	0.257***	0.462***
		<i>(0.00364)</i>	<i>(0.00711)</i>	<i>(0.00356)</i>	<i>(0.0107)</i>	<i>(0.00827)</i>
R ²		0.643	0.843 ⁸⁰	0.681	0.608	0.875
R ² wab		0.45	0.32 ⁸¹	0.48	0.40	0.56
Difference R2- R2 wab		0.193	0.523	0.201	0.208	0.315

Source: own elaboration from SES dataset

⁷⁷ R² calculated without all bonuses

⁷⁸ Without occupation

⁷⁹ Without occupation

⁸⁰ Without occupation

⁸¹ Without occupation

Table 33.4 SES 2002 Regular Bonuses, Productivity Bonuses and Profit Sharing Premium Model A

COEFFICIENTS	FINLAND	SPAIN	PORTUGAL	FRANCE	ROMANIA	POLAND
REGULAR BONUSES PRODUCTIVITY BONUSES PROFIT SHARING PREMIUMS MODEL A						
lnhlyregulbon MODEL A	0.308***	0.357***	0.742***	0.200***	0.181***	
	<i>(0.00415)</i>	<i>(0.00413)</i>	<i>(0.0182)</i>	<i>(0.00533)</i>	<i>(0.0180)</i>	
lnhlyproductbon MODEL A	0.0899***	0.100***	0.0468***	0.152***	0.201***	
	<i>(0.00125)</i>	<i>(0.00145)</i>	<i>(0.00530)</i>	<i>(0.00258)</i>	<i>(0.0215)</i>	
lnhlyprofitsbon MODEL A			0.0807***	0.0741***	0.145***	
			<i>(0.00953)</i>	<i>(0.00291)</i>	<i>(0.0150)</i>	
R ²	0.645	0.741	0.953	0.720	0.871	
R ² wrb	0.46	0.60	0.68 ⁸²	0.679	0.79	
R ² wab	0.25	0.47	0.48 ⁸³	0.39	0.31	
Difference R2- R2 wrb	0.185	0.141	0.273	0.041	0.081	
Difference R2wrb- R2 wab	0.21	0.13	0.2	0.289	0.48	
			<i>(0.0178)</i>	<i>(0.0110)</i>	<i>(0.0429)</i>	

⁸² Without NACE and without occupation

⁸³ Without NACE and without occupation

Table 34.4 SES 2002 Regular Bonuses, Productivity Bonuses and Profit Sharing Premium Model B

COEFFICIENTS	FINLAND	SPAIN	PORTUGAL	FRANCE	ROMANIA	POLAND
REGULAR BONUSES PRODUCTIVITY BONUSES PROFIT SHARING PREMIUMS MODEL B						
lnhlyregulbon MODEL B	0.295***	0.303***	0.745***	0.177***	0.173***	
	(0.00496)	(0.00463)	(0.0174)	(0.00551)	(0.0190)	
lnhlyproductbon MODEL B	0.0725***	0.0964** *	0.0450***	0.126***	0.190***	
	(0.00131)	(0.00141)	(0.00489)	(0.00275)	(0.0233)	
lnhlyprofitsbon MODEL B			0.0808***	0.0947***	0.136***	
			(0.0107)	(0.00301)	(0.0143)	
R ²	0.714	0.797	0.955 ⁸⁴	0.785	0.886 ⁸⁵	
R ² wrb ⁸⁶	0.51 ⁸⁷	0.72	0.73 ⁸⁸	0.70 ⁸⁹	0.84 ⁹⁰	
R ² wab ⁹¹	0.41	0.62	0.58 ⁹²	0.55	0.46	
Difference R2- R2 wrb	0.204	0.077	0.225	0.085	0.046	
Difference R2wrb- R2 wab	0.1	0.1	0.15	0.15	0.38	

⁸⁴ Without NACE and without occupation

⁸⁵ Without NACE and without occupation

⁸⁶ Without regular bonuses

⁸⁷ Without occupation

⁸⁸ Without NACE and without occupation

⁸⁹ Without occupation

⁹⁰ Without occupation and NACE

⁹¹ Without all bonuses

⁹² Without NACE and without occupation

Table 35.4 SES 2002 Regular Bonuses, Productivity Bonuses and Profit Sharing Premium Model C

COEFFICIENTS	FINLAND	SPAIN	PORTUGAL	FRANCE	ROMANIA	POLAND
REGULAR BONUSES PRODUCTIVITY BONUSES PROFIT SHARING PREMIUMS MODEL C						
Inhlyregulbon MODEL C		0.339***	0.711***	0.325***	0.223***	
		<i>(0.0102)</i>	<i>(0.0476)</i>	<i>(0.0193)</i>	<i>(0.0612)</i>	
Inhlyproductbon MODEL C		0.123***	0.0363***	0.118***	0.219***	
		<i>(0.00255)</i>	<i>(0.00629)</i>	<i>(0.00483)</i>	<i>(0.0412)</i>	
Inhlyprofitsbon MODEL C			0.106***	0.219***	0.180***	
			<i>(0.0178)</i>	<i>(0.0110)</i>	<i>(0.0429)</i>	
R ²		0.704 ⁹³	0.933 ⁹⁴	0.800	0.823 ⁹⁵	
R ² wrb ⁹⁶		0.61	0.63 ⁹⁷	0.70 ⁹⁸	0.80 ⁹⁹	
R ² wab ¹⁰⁰		0.45	0.32 ¹⁰¹	0.479	0.40	
Difference R2- R2 wrb		0.094	0.303	0.1	0.023	
Difference R2wrb- R2 wab		0.16	0.31	0.221	0.4	

Tables 32.4, 33.4, 34.5 and 35.4 summarize the main results about the incidence of bonuses in wage determination, from OLS regression using SES 2002 dataset. Through three different models, in six European countries, we've analyzed the incidence of annual bonuses and the incidence of his breakdown in regular bonuses, productivity bonuses and profit sharing.

In the case of annual bonuses for model A (taking to account only individual factors and variable pay), we can explain that Portugal and Poland have higher incidence in wage determination in comparison with the rest of countries. These two countries, as we have explained in previous chapter, have intermediate and decentralized collective bargaining, respectively. They show

⁹³ Without seniority

⁹⁴ Without occupation

⁹⁵ Without age, occupation, workday, contract and supervisory

⁹⁶ Without regular bonuses

⁹⁷ Without occupation

⁹⁸ Without occupation

⁹⁹ Without occupation

¹⁰⁰ Without all bonuses

¹⁰¹ Without occupation

that for every increase of 1% in annual bonuses wage increases is 0.67% in the case of Portugal and is 0.52% in the case of Poland. Also, we can say that in these 2 countries the proportion of wage variance explained by individual factors and variable pay are higher than the rest of countries: 89.2% and 74.3%. And if we analyze the incidence in wage variance of bonuses, comparing R2 with bonuses with R2 without bonuses, we can say that in Portugal and Poland bonuses explain the main part of wage variance respect to the rest of countries: 41.2% in the case of Portugal and 34.3% in the case of Poland. For the rest of countries, bonuses explain about 20% of wage variance.

In the case of model B, (taking to account all factors: individual factors, workplace factors, establishment factors and variable pay), again in Portugal and Poland annual bonuses have higher incidence in wage determination: for every increase of 1% in annual bonuses, wage increases is 0.63% in the case of Portugal and is 0.45% in the case of Poland. And in these 2 countries, bonuses explain respectively 28.6% of wage variance and 25.9% of wage variance. Same explanation can be used for model C (including individual factors, workplace factors and fixed effects for establishments), where Portugal explains 52.3% of wage variance and Poland explains 31.5% of wage variance.

In these 2 countries, bonuses are so important that in Portugal and with model C, they are explaining more than 50% of wage variance and in Poland, with model A, they are explaining 34.3%.

Now, if we have a look to the breakdown of annual bonuses, in model A and in the case of regular bonuses, we can say that Portugal and Spain are countries with higher incidence in wage determination: for every increase of 1% in regular bonuses, wage increases are 0.74% and 0.35% respectively. In the case of productivity bonuses, Romania and France have the first and second position, respectively: for every increase of 1% in productivity bonuses, wage increases are 0.20% and 0.15%. And finally, Romania is the country with higher incidence of profit sharing in wage determination: for every increase of 1% in profit sharing, wage increases are 0.14%.

Regular bonuses explain 27.3% of wage variance for Portugal and 18.5% of wage variance for Finland, as the second country with a higher explanation. Spain is the third country with an explanation of 14.1% of wage variance. This percentage is lower for France (4.1%) and for Romania (8.1%). So, countries with more centralized collective bargaining have higher percentage of explanation of wage variance by regular bonuses and countries with more

decentralized collective bargaining have lower percentage. And, on the opposite side, countries with more centralized collective bargaining have lower percentage of explanation of wage variance by productivity bonuses and profit sharing and countries with more decentralized collective bargaining have higher percentage: 48% for Romania and 28.9% for France.

In model B, Portugal and Spain are countries with higher incidence of regular bonuses in wage determination (0.74% and 0.30%, respectively). Poland and Romania are countries with bigger incidence of productivity bonuses in wage determination (0.19% and 0.12% respectively) and with bigger incidence of profit sharing in wage determination (0.13% and 0.09%, respectively).

Regular bonuses explain 22% and 20% of wage variance for Portugal and Finland. And productivity bonuses and profit sharing explain 38% of wage variance for Poland and the 15% for Romania and Portugal. So, as with model A, countries with more centralized collective bargaining have higher percentage of wage variance explanation by regular bonuses and countries with more decentralized collective bargaining have higher percentage of explanations of wage variance by productivity bonuses and profit sharing.-

In model C, Portugal and Spain again are countries with higher incidence of regular bonuses in wage determination (0.71% and 0.33% respectively). Poland and Spain are countries with bigger incidence of productivity bonuses in wage determination (0.21% and 0.12% respectively). And Romania and Poland are countries with bigger incidence of profit sharing in wage determination (0.21% and 0.18%) respectively. Regular bonuses explain 30% and 10% for Portugal and France respectively. Productivity bonuses and profit sharing explain 40% of wage variance for Poland and 31% of wage variance for Portugal. Unlike model A and in model B, countries with more decentralized collective bargaining have higher percentage of wage variance explanation by regular bonuses and by productivity bonuses and profit sharing.

4.5.1.2 Results for the SES 2006

Table 36.4 SES 2006 Model A Model B and Model C

COEFFICIENTS	FINLAND	SPAIN	PORTUGAL	FRANCE	ROMANIA	POLAND
ANNUAL BONUSES						
VARIABLE PAY SCHEMES						
Inhlybonuses MODEL A	0.171***	0.378***		0.127***	0.244***	0.876***
	<i>(0.00121)</i>	<i>(0.00178)</i>		<i>(0.00129)</i>	<i>(0.00131)</i>	<i>(0.00241)</i>
R ²	0.452	0.678		0.508	0.580	0.921
R ² wab ¹⁰²	0.31	0.43		0.359	0.37	0.33
Difference R2- R2 wab	0.142	0.248		0.149	0.21	0.591
Inhlybonuses MODEL B	0.140***	0.328***		0.118***	0.212***	0.834***
	<i>(0.00127)</i>	<i>(0.00185)</i>		<i>(0.00141)</i>	<i>(0.00127)</i>	<i>(0.00327)</i>
R ²	0.575	0.737		0.591	0.659 ¹⁰³	0.945
R ² wab ¹⁰⁴	0.49	0.57		0.51	0.51	0.50
Difference R2- R2 wab	0.085	0.167		0.081	0.149	0.445
Inhlybonuses MODEL C		0.344***		0.151***	0.264***	0.920***
		<i>(0.00368)</i>		<i>(0.00326)</i>	<i>(0.00500)</i>	<i>(0.00513)</i>
R ²		0.642		0.549	0.674 ¹⁰⁵	0.971
R ² wab ¹⁰⁶		0.41		0.44	0.488 ¹⁰⁷	0.41
Difference R2- R2 wab		0.232		0.109	0.186	0.561

Source: own elaboration from SES dataset

In table 36.4, we analyzed same results schemes like tables 32.4, 33.4, 34.4 and 35.4, but for the SES 2006 dataset. In this case, we don't have any breakdown about annual bonuses. Poland and Spain show the highest level of incidence in wage determination in model A: for every increase of 1% in bonuses, wages increase 0.87% for Poland and 0.37% for Spain. Bonuses would explain 59% of wage variance in the case of Poland and the 24.8% for Spain.

In model B and C, Poland and Spain show highest incidence in wage determination: 0.83% and 0.92% for Poland and 0.32% and 0.34% for Spain. In model B, bonuses would explain 44.5% of wage variance for Poland and 16.7% of wage variance for Spain. In model C, bonuses would explain 56.1% of wage variance for Poland and 23.2% of wage variance for Spain.

¹⁰² R² calculated without all bonuses

¹⁰³ Without contract

¹⁰⁴ R² calculated without all bonuses

¹⁰⁵ Without contract

¹⁰⁶ R² calculated without all bonuses

¹⁰⁷ Without contract

4.5.1.3 Results for the SES 2010

Table 37.4 SES 2010 Model A Model B and Model C

COEFFICIENTS	FINLAND	SPAIN	PORTUGAL	FRANCE	ROMANIA	POLAND
ANNUAL BONUSES						
VARIABLE PAY SCHEMES						
Inhlybonuses MODEL A	0.0722***	0.561***		0.164***	0.283***	0.172***
	<i>(0.00124)</i>	<i>(0.00240)</i>		<i>(0.00117)</i>	<i>(0.00154)</i>	<i>(0.000680)</i>
R ²	0.169	0.741		0.494	0.532	0.570
R ² wab ¹⁰⁸	0.15	0.25		0.34	0.35	0.43
Difference R2- R2 wab	0.019	0.491		0.154	0.182	0.14
Inhlybonuses MODEL B	0.0530***	0.470***		0.141***	0.251***	0.144***
	<i>(0.00122)</i>	<i>(0.00260)</i>		<i>(0.00118)</i>	<i>(0.00138)</i>	<i>(0.000625)</i>
R ²	0.259	0.789		0.637	0.635 ¹⁰⁹	0.724
R ² wab ¹¹⁰	0.253	0.37		0.54	0.517	0.63
Difference R2- R2 wab	0.006	0.419		0.097	0.118	0.094
Inhlybonuses MODEL C		0.578***		0.191***	0.292***	0.207***
		<i>(0.00498)</i>		<i>(0.00301)</i>	<i>(0.00534)</i>	<i>(0.00658)</i>
R ²		0.771		0.624	0.636 ¹¹¹	0.752
R ² wab ¹¹²		0.295		0.50	0.462 ¹¹³	0.372 ¹¹⁴
Difference R2- R2 wab		0.476		0.124	0.174	0.38

Source: own elaboration

In table 37.4, we analyzed same results schemes like table 32.4 and table 36.4 but for the SES 2010 dataset. As above, we don't have any breakdown about anual bonuses. Spain and Romania show the highest level of incidence in wage determination in model A: for every increase of 1% in bonuses, wages increase 0.56% for Spain and 0.28% for Romania. Bonuses would explain 49% of wage variance in the case of Spain and the 18.2% for Romania. Same results could be got from model B and model C. In model B, bonuses would explain 41% of wage variance for Spain and 11.8% for Romania. In model C, bonuses would explain 47.6% of wage variance for Spain and 17.4% for Romania.

¹⁰⁸ R² calculated without all bonuses

¹⁰⁹ No occupation

¹¹⁰ R² calculated without all bonuses

¹¹¹ No occupation

¹¹² R² calculated without all bonuses

¹¹³ No occupation

¹¹⁴ No occupation

Table 38.4 Summary SES 2002, 2006 and 2010 Model A, B and C

COEFFICIENTS	FINLAND	SPAIN	PORTUGAL	FRANCE	ROMANIA	POLAND
ANNUAL BONUSES						
VARIABLE PAY SCHEMES						
SES 2002						
Difference R2- R2 wab MODEL A	0.239	0.219	0.412	0.25	0.275	0.343
Difference R2- R2 wab MODEL B	0.158	0.13	0.286	0.155	0.201	0.259
Difference R2- R2 wab MODEL C		0.193	0.523	0.201	0.208	0.315
SES 2006						
Difference R2- R2 wab MODEL A	0.142	0.248		0.149	0.21	0.591
Difference R2- R2 wab MODEL B	0.085	0.167		0.081	0.149	0.445
Difference R2- R2 wab MODEL C		0.232		0.109	0.186	0.561
SES 2010						
Difference R2- R2 wab MODEL A	0.019	0.491		0.154	0.182	0.14
Difference R2- R2 wab MODEL B	0.006	0.419		0.097	0.118	0.094
Difference R2- R2 wab MODEL C		0.476		0.124	0.174	0.38

Source: own elaboration from SES data set

Looking the evolution of explanation of wage variance by bonuses from 2002 SES dataset to 2010 SES data set (table 38.4), we can say that in most of six countries its percentage has been decreasing. The exception is Spain where this percentage has been increasing close to 50%. In other countries, like Romania this percentage has been reduced.

The explanation of this evolution could be that some countries are witnessing a decentralization process in their collective bargaining. This could mean that the part of regular bonuses from total annual bonuses is decreasing in front of the part of productivity bonuses and profit sharing premiums.

As we found in previous chapter, due to Finland change its collective bargaining level becoming less decentralized, Spain is the country with higher level of collective bargaining. And Romania, which had a decentralized level of collective bargaining, from 2010 it became much more centralized. So, in spite of this evolution, the final results in SES 2010 show that in countries with higher level of centralization in collective bargaining are those countries with higher percentage in wage variance explanation by bonuses. This could mean

that, in those countries, weight of regular bonuses in total annual bonuses is higher than in the rest of countries. But to go further in this conclusion we would need breakdown of bonuses in SES 2006 and in SES 2010.

4.5.2 More inequality analysis: Gini Index and Fields decomposition

4.5.2.1 Gini Index and variance of logarithms

If we want to evaluate one dimension of inequality like income inequality applied to wages, we could use the evolution of Gini Index and variance logarithms, as dispersion measures. With our dataset, we compared results for the SES wave 2002, SES wave 2006 and the SES wave 2010.

In tables 38.4, 39.4 and 40.4, we analyzed Gini Index and Variance log of gross annual salary, bonuses and of a proxy of base pay¹¹⁵, which is calculated subtracting bonuses for gross annual salary. Because could be interesting to understand the dispersion level taking to account bonuses and without taking to account in whole annual salary.

¹¹⁵ SES not offers base pay information for every country. We have to remind that all bonuses includes regular bonuses, productivity bonuses and profit sharing premiums

Table 39.4 SES 2002 Gini Index and Variance log

2002 year		FINLAND	SPAIN	PORTUGAL	FRANCE	ROMANIA	POLAND
Proxy Base Pay							
	Gini index	0.22	0.3	0.35	0.35	0.4	0.34
	Variance log	0.14	0.26	0.32	0.38	0.42	0.32
Gross Annual Salary							
	Gini index	0.23	0.31	0.36	0.37	0.42	0.34
	Variance log	0.14	0.27	0.35	0.38	0.41	0.34
All Bonuses							
	Gini index	0.43	0.43	0.46	0.61	0.62	0.33
	Variance log	0.62	0.55	0.56	1.39	1.35	0.40
Regular bonuses							
	Gini index	0.32	0.37	0.38	0.44	0.58	0.3
	Variance log	0.41	0.45	0.40	0.79	1.17	0.32
Productivity bonuses							
	Gini index	0.58	0.63	0.61	0.75	0.71	
	Variance log	1.39	1.82	1.61	2.25	1.56	
Profit Sharing premiums							
	Gini index			0,49		0.76	0.43
	Variance log			1,04		2.02	0.66

Source: own elaboration from SES dataset

From table 39.4, we can say that Finland is the country with more equal distribution in its gross annual salary and its proxy of base pay, according to a Gini Index closer to 0 (0.22 in the case of proxy base pay and 0.23 in the case of gross annual salary). On the contrary, Romania would become the country with less equal distribution, according to a Gini Index of 0.4 for proxy base pay and 0.42 for gross annual salary. The same scheme could be found in the case of variance of logarithms.

Looking into bonuses, we can observe, in general, higher Gini Index and higher variance of logarithms in all countries in comparison with base pay and gross annual salary. In the case of all bonuses and regular bonuses, Romania is again the country with higher Gini Index, with levels of 0.62 and 0.58, respectively. And Poland is the country with lower Gini Index, with levels of 0.3 and 0.33 respectively. For Productivity bonuses, Finland has lowest Gini Index (0.58) and France has highest Gini Index (0.75). And finally, in the case of profit sharing premium, again Romania has highest Gini Index (0.76) and Poland lowest Gini Index (0.43).

That is our departure situation and we are going to compare these results with situation in 2006 and 2010.

Table 40.4 SES 2006 Gini Index and Variance log

2006 year		FINLAND	SPAIN	PORTUGAL	FRANCE	ROMANIA	POLAND
Proxy Base Pay							
	Gini index	0.24	0.29	0.38	0.28	0.41	0.41
	Variance log	0.16	0.2401	0.4225	0.2209	0.4624	0.4225
Gross Annual Salary							
	Gini index	0.24	0.3	0.38	0.3	0.42	0.41
	Variance log	0.16	0.2601	0.4356	0.2401	0.49	0.4225
All Bonuses							
	Gini index	0.46	0.43	0.43	0.69	0.61	0.42
	Variance log	0.7744	0.5929	0.5329	2.3409	1.5625	0.5041

Source: own elaboration from SES dataset

Table 40.4, shows that in 2006, in the case of proxy base pay and gross annual salary, Finland continues being the country with more equal distribution, because it has lower Gini Index in comparison with the rest of countries. In the same way, Romania continues being the country with less equal distribution. But the main differences with 2002 results are that both Finland and Romania don't highlight in the same way. For example, close to Finland, other countries like Spain or France also show not very high Gini Index. And close to Romania, Poland shows a high Gini Index. So, in the case of proxy of base pay and in the case of gross annual salary, we can find 2 groups of

countries. One group with higher Gini Index level and inequality (Romania, Poland and Portugal) and other group with lower Gini Index level (Finland, France and Spain).

If we have a look to bonuses (without breakdown), as in 2002, Poland has lower Gini Index (0.42) and France has higher Gini Index (0.69). Poland is not alone in its position, because it is followed very close by Spain and Portugal.

Table 41.4 SES 2010 Gini Index and Variance log

2010 year		FINLAND	SPAIN	PORTUGAL	FRANCE	ROMANIA	POLAND
Proxy Base Pay							
	Gini index	0.24	0.4	0.38	0.27	0.4	0.33
	Variance log	0.1681	0.5776	0.3969	0.2025	0.4356	0.3136
Gross Annual Salary							
	Gini index	0.4	0.4	0.39	0.29	0.41	0.33
	Variance log	0.7056	0.5776	0.4096	0.2209	0.4489	0.3249
All Bonuses							
	Gini index	0.6	0.52	0.48	0.59	0.6	0.49
	Variance log	2.3409	0.9801	0.6241	1.3689	1.3225	1.2769

Source: own elaboration from SES dataset

In Table 41.4, results from the SES 2010 could be found. Here, we have to mention some relevant changes respect to previous tables. In the case for proxy of base pay, Finland is the most equal country, yet. But, Spain, has worsened its situation, because from a Gini Index of 0.3 in 2002 and of 0.29 in 2006, it show a higher Gini Index of 0.4 in 2010, reaching the level of Romania. But if we compare the situation in proxy of base pay with the situation in gross annual salary, we can see that, a part from Spain, surprisingly, Finland has deteriorated its position, reaching also Romania level. France remained as the country with more equal distribution of its gross annual salary.

This explanation is connected with the fact that, in the case of bonuses, Finland and Spain are showing a higher Gini Index of 0.4 close to Romania level. So, one of the reasons that could give an explanation to the deterioration of the Finland position in gross annual salary is its deterioration in bonuses equality level. And this fact, like the changes in Spain, could be caused by the

effects of the international economic crisis. But, in the case of Finland, this situation could be related to the change in collective bargaining regime, which has been analyzed in previous chapter: as much more decentralized bargaining more inequality in gross annual salary. Nevertheless, if this argument was true, we have to expect that Romania will improve its position, because their collective bargaining regime changed, becoming more centralized and that is no the case, because its position it is rather similar through in 2002, 2006 and 2010 dataset. We can say that changes in collective bargaining regime were higher in Finland than in Romania: Finland changes from rather centralized (level 5) to intermediate (level 3) bargaining regime and Romania changes from intermediate (level 2) to intermediate (level 3). But, it is difficult to find a clear pattern.

4.5.2.2. Fields decomposition

Going further, if we want to know which are the weight of different factors in wage inequality, we can use Fields decomposition¹¹⁶ Following this procedure, the dispersion of dependent variable measured by variance, for example, is broken down into a number of components such the whole is equal to the sum of its parts. (Fields, 2003b).

We calculated Fields decomposition for all factors¹¹⁷ but we presented summarized results pooled in different groups: factors connected with human capital (HC), connected with workplace (WP), connected with establishment (ES) and bonuses.

In every table, we can observe Fields decomposition with information from SES dataset, using proxy of base pay, total gross annual salary and total gross annual salary plus bonuses. We are aware that in last case, as bonuses are included in gross annual salary, in this decomposition reversal causation¹¹⁸ could be found. Because we are analyzing inequality of gross annual salary with factorial Fields decomposition and bonuses is one factor which is inside gross annual salary at the same time. So, when we are analyzing inequality of gross

¹¹⁶ We've used `ineqrbd` stata instruction designed by Fiore and Jenkins (2007)

¹¹⁷ We could go further and also have done the same calculations taking to account only human capital factors, human capital plus workplace factors and plus fixed effects of establishment. Like in (Simon H., 2009)

¹¹⁸ In this sense, inequality in gross annual salary are determining inequality in bonuses or inequality in bonuses are determining inequality in gross annual salary.

annual salary, we are analyzing inequality in bonuses, too. But, we are interested in look into which part of inequality of gross annual salary is explained by different factors and by bonuses. For this reason, we've decided calculate the same decomposition for gross annual salary without bonuses (proxy Base pay), gross annual salary (with bonuses) and gross annual salary with breakdown for bonuses and we compare all the results.

Table 42.4 SES 2002 Fields decomposition

FIELDS DECOMPOSITION YEAR 2002	Proxy BASE PAY		GROSS ANNUAL SALARY		GROSS ANNUAL SALARY + BONUSES		Proxy BASE PAY		GROSS ANNUAL SALARY		GROSS ANNUAL SALARY + BONUSES	
	FINLAND	FINLAND	FINLAND	FINLAND	SPAIN	SPAIN	SPAIN	SPAIN	SPAIN	SPAIN	SPAIN	SPAIN
HC factors	14.06	15.04	8.82	21.59	22.56	13.52	18.53	18.77	18.77	5.01	18.77	5.01
WP factors	21.01	21.47	14.20	26.60	27.27	16.98	25.45	25.71	25.71	7.16	25.71	7.16
ES factors	4.12	4.88	1.69	11.74	12.71	7.82	24.78	25.09	25.09	6.57	25.09	6.57
Bonuses			32.12			36.63				72.35		72.35
Total	39.18	41.38	56.83	59.93	62.55	74.96	68.76	69.57	69.57	91.09	69.57	91.09
Total-bonuses residual	60.82	58.62	43.17	40.07	37.45	25.04	31.24	30.43	30.43	18.73	30.43	18.73
HC factors	16.62	17.70	13.46	21.28	17.14	14.84	18.61	18.78	18.78	11.06	18.78	11.06
WP factors	31.39	34.42	25.00	19.08	16.10	15.25	31.08	31.39	31.39	29.64	31.39	29.64
ES factors	2.28	3.79	1.08	12.77	13.36	7.15	8.01	8.08	8.08	0.73	8.08	0.73
Bonuses			31.92			28.87				42.45		42.45
Total	50.28	55.91	71.46	53.13	46.60	66.11	57.71	58.25	58.25	83.87	58.25	83.87
Total-bonuses residual	49.72	44.09	28.54	47.05	53.51	33.90	42.29	41.75	41.75	16.13	41.75	16.13

Source: own elaboration

In table 42.4, results of Fields decomposition with the SES 2002 dataset¹¹⁹ are showed. In general, we can say that important factors which are playing an important role in inequality are gender (especially in the case of Finland and Spain), some levels of education (Romania, Poland, Portugal and France), seniority (Spain), some kinds of occupation (France, Poland, Portugal, Spain), some kinds of sectors (Portugal), companies with more than 250 workers (Spain, Portugal and Romania) and collective agreement at enterprise level (Spain and Portugal).

If we compare the situation for proxy base pay, we can say that in most of all of six countries workplace factors are determining the higher percentage of inequality. The exception would be Romania, where education has a bigger importance in inequality in comparison with the rest of countries.

All the considered factors are explaining the 68.76% of inequality in proxy of base pay in Portugal and 59.93% of inequality in proxy of base pay in Spain. If we would take into account fixed effects of establishments we could observe probably that establishment factors would have higher incidence in some countries. Nevertheless, establishment factors have biggest influence for Spain, Romania and especially for Portugal, explaining between 24% and 25% of inequality. The importance of workplace elements is bigger in France and Poland due to the role of some kind of occupations.

If we observe the Fields decomposition considering gross annual salary plus bonuses, we can say that in the case of Portugal, Poland and Finland the contribution of bonuses are higher than the sum of other factors. In Portugal, bonuses would explain 72.35% of total inequality and the 18.73% the remaining factors. In the case of Poland, bonuses would explain 42.45% of the total inequality (83.87%) and the remaining factors the 41.42%, reaching 2 percentages almost to the same level. In Finland, bonuses would explain 32.12% of 56.83% total inequality and the rest of factors the 24.71% remaining. So, taking into account that a part of the total inequality of gross annual salary includes inequality of bonuses, we can say that in the case of Portugal, Poland (with only a difference of 1 percentual point) and Finland bonuses have high incidence in gross annual salary inequality in comparison

¹¹⁹ In appendices all details about Fields decomposition could be found

with the rest of factors¹²⁰ . These results are consistent with the previous section in which we have said that in Portugal and Poland bonuses explain the main part of wage variance respect to the rest of countries and that in Finland regular bonuses explain the main part of wage variance respect to the rest of countries.

In the rest of countries, the contribution of bonuses to total gross annual salary inequality is lower than the rest of elements, especially in the case of France and Romania (in the case of Spain the quantities are very similar). So, we can conclude that in these three countries, bonuses have highest (Portugal and Poland) and high (Finland) level of incidence in inequality level and all bonuses (Portugal and Poland) and regular bonuses (Finland) explain the main part of wage variance.

¹²⁰ If we have to talk about countries with highest incidence of bonuses in gross annual salary inequality we have to refer to Portugal, Poland and Spain. But in the case of last country, the incidence of bonuses is not higher than the rest of factors.

Table 43.4 SES 2006 Fields decomposition

FIELDS DECOMPOSITION YEAR 2006	Proxy BASE PAY	GROSS ANNUAL SALARY	GROSS ANNUAL SALARY + BONUSES	Proxy BASE PAY	GROSS ANNUAL SALARY	GROSS ANNUAL SALARY + BONUSES	Proxy BASE PAY	GROSS ANNUAL SALARY	GROSS ANNUAL SALARY + BONUSES	Proxy BASE PAY	GROSS ANNUAL SALARY	GROSS ANNUAL SALARY + BONUSES
	FINLAND	FINLAND	FINLAND	SPAIN	SPAIN	SPAIN	PORTUGAL	PORTUGAL	PORTUGAL	PORTUGAL	PORTUGAL	PORTUGAL
HC factors	16.85	18.46	15.18	21.76	22.99	13.86	28.73	28.86	28.86	28.73	28.86	6.66
WP factors	24.32	23.86	19.68	23.33	23.86	15.02	32.86	33.03	33.03	32.86	33.03	8.04
ES factors	4.76	7.38	5.92	9.96	10.91	6.94	12.26	11.95	11.95	12.26	11.95	4.77
Bonuses			16.77			37.84						74.64
Total	45.93	49.70	57.54	55.05	57.76	73.66	73.84	73.84	73.84	73.84	73.84	94.10
Total-bonuses residual			40.77			35.82						19.46
	54.07	50.30	42.46	44.95	42.24	26.34	26.16	26.16	26.16	26.16	26.16	5.90
HC factors	FRANCE	FRANCE	FRANCE	ROMANIA	ROMANIA	ROMANIA	POLAND	POLAND	POLAND	POLAND	POLAND	POLAND
WP factors	22.20	21.30	18.83	16.39	16.19	14.29	14.23	14.33	14.33	14.23	14.33	2.25
ES factors	26.67	24.80	19.90	24.84	24.51	22.84	31.62	32.06	32.06	31.62	32.06	9.60
Bonuses	3.16	5.17	1.47	9.08	10.41	2.35	3.63	4.00	4.00	3.63	4.00	-1.06
Total			18.93			26.47						83.76
Total-bonuses residual	52.03	51.27	59.13	50.31	51.11	65.95	49.48	50.39	50.39	49.48	50.39	94.55
			40.20			39.48						10.79
Total-bonuses residual	47.97	48.73	40.87	49.71	48.91	34.08	50.52	49.61	49.61	50.52	49.61	5.45

Source: own elaboration

Table 43.4 shows a summary of the main results of Fields decomposition from SES 2006 dataset. The most important elements, in this case, which have a higher incidence on inequality are gender (Finland and Spain), some high levels of education, seniority (Spain and Portugal), some kinds of occupation and some kinds of sectors. Like in results from SES 2002 dataset, workplace factors are which have biggest influence in inequality of Proxy base pay and in inequality of anual gross salary.

Considering all factors together, we can remark that they are explaining 55% of Spain Proxy base pay and 73.84% of Portugal Proxy base pay. And we can say that all factors are explaining 73.66% of gross anual salary plus bonuses inequality in Spain, 94.10% in Portugal and 94.55% in Poland.

Analyzing Fields decomposition, if we consider gross annual salary plus bonuses, we can say that in the case of Portugal, Poland and Spain the contribution of bonuses are higher than the sum of other factors. In Portugal, bonuses would explain 74.64% of total inequality and the 19.46% the remaining factors. In the case of Poland, bonuses would explain 83.76% of the total inequality (94.55%) and the remaining factors the 10.79%. In Spain case, bonuses would explain 37.84% of 73.66% total inequality and the rest of factors would explain the 35.82% remaining. In this way, we can say that in the case of Portugal, Poland and Spain bonuses have biggest incidence in gross annual salary inequality in comparison with the rest of factors. These results are coherent with the previous section in which we have said that, using SES 2006 dataset, in Poland and Spain bonuses explain the main part of wage variance respect to the rest of countries¹²¹.

¹²¹ We don't have results for Portugal regression

Table 44.4 SES 2010 Fields decomposition

FIELDS DECOMPOSITION YEAR 2010	FINLAND		FINLAND		FINLAND		FINLAND		SPAIN		PORTUGAL		PORTUGAL		
	Proxy BASE PAY	GROSS ANNUAL SALARY	GROSS ANNUAL SALARY + BONUSES	Proxy BASE PAY	GROSS ANNUAL SALARY	GROSS ANNUAL SALARY + BONUSES	Proxy BASE PAY	GROSS ANNUAL SALARY	GROSS ANNUAL SALARY + BONUSES	Proxy BASE PAY	GROSS ANNUAL SALARY	GROSS ANNUAL SALARY + BONUSES	Proxy BASE PAY	GROSS ANNUAL SALARY	GROSS ANNUAL SALARY + BONUSES
HC factors	15.98	8.35	7.63	9.80	11.61	6.93	29.71	30.11	14.18						
WP factors	26.57	12.81	12.27	21.20	23.32	18.53	27.67	28.02	14.00						
ES factors	5.50	4.14	3.93	2.13	2.95	2.36	10.32	10.50	4.74						
Bonuses			2.08			51.03			51.50						
Total	48.05	25.30	25.91	33.13	37.89	78.86	67.70	68.63	84.42						
Total-bonuses			23.83			27.82			32.92						
residual	51.95	74.70	74.09	66.87	62.11	21.14	32.30	31.37	15.58						
HC factors	18.17	18.31	14.42	16.48	16.42	11.73	17.04	17.16	14.94						
WP factors	29.96	28.61	24.64	27.33	26.93	21.38	42.25	41.42	41.32						
ES factors	6.21	7.60	6.39	7.90	8.44	6.40	2.81	4.21	-1.05						
bonuses			18.26			26.55			17.03						
Total	54.34	54.53	63.71	51.71	51.79	66.05	62.10	62.79	72.24						
Total-bonuses			45.45			39.51			55.21						
residual	45.66	45.47	36.29	48.29	48.21	33.95	37.69	36.99	27.57						

Source: own elaboration

Finally, in table 44.4 we included the main results from Fields decomposition using SES 2010 dataset. Like in previous table, in most of countries, workplace factors are those which have highest contribution to inequality. Portugal is the exception with bigger percentages relevance of human capital factors respect to workplace factors and establishment factors. The main reason for this pattern is the higher weight of some education level (bachelor and master) respect to the rest of countries.

Other important aspects to highlight are that gender is not as important element in inequality as in previous years (for Finland and Spain). Moreover, education is not as important as in 2002 and 2006 dataset; the exception is Romania, Poland and Portugal (as we've just explained). Seniority is important, not only for Spain, but for Portugal and Poland. Some kinds of occupations have big importance in inequality, partial workday is relevant for Spain and supervisory for France. Size of companies with more than 250 workers is an important element for Romania and Portugal. And finally, collective agreement at enterprise level is important for Portugal.

Again, low weight of establishment factors could be connected with the fact that we are not taking into account fixed effects.

Taking to account gross annual salary plus bonuses, we can say that in the case of Portugal, Spain and Romania the contribution of bonuses are higher than the sum of other factors. In Portugal, bonuses would explain 51.5% of total inequality and the 32.92% the remaining factors. In the case of Spain, bonuses would explain 51% of the total inequality (78.8%) and the remaining factors the 27.8%. In Romania, bonuses would explain 26.5% of 66% total inequality and the rest of factors the 39.5% remaining. In this way, we can say that in the case of Spain and Portugal bonuses have biggest incidence in gross annual salary inequality in comparison with the rest of factors. In the case of Romania bonuses have one the highest incidence in gross annual salary inequality but this percentage is not superior to the incidence of the rest of factors. Again, these results are connected with the results in previous section in which we have said that, using SES 2010 dataset, in Spain and Romania, bonuses are explaining the main part of wage variance respect to the rest of countries¹²².

¹²² We don't have results for Portugal regression

Finally, we'd like to remark the low incidence of bonuses in inequality of Finland of only 2% in comparison with the rest of countries and in comparison with previous years. One possible explanation of this fact could be that as Finland changes its collective bargaining regimes, from more centralized to more decentralized, regular bonuses would be losing importance in front of the other types of bonuses. We have to remind that in Finland regular bonuses were important factors explaining the main part of wage variance.

4.6. Conclusions

The main objective of this chapter is to show if the introduction and use of Variable pay systems implies much more wage inequality. Using data from three waves of SES (2002, 2006 and 2010), comparing six selected countries, and considering bonuses as a proxy of Variable pay systems, we can say that there is some relationship between bonuses and wage inequality.

Our results show that in five countries of our analyzed group, Portugal, Poland, Spain, Romania and Finland (only in the case of regular bonuses), bonuses are explaining the most important part of wage variance. And in these same five countries bonuses would have highest incidence in gross annual salary inequality, following Fields decomposition. With 2002 dataset relevant countries of these five are Portugal, Poland and Finland. With 2006 dataset are Portugal, Poland and Spain. And with 2010 dataset are Portugal, Spain and Romania. So, France would be the only country which wouldn't be affected by the wage inequality with the introduction of bonuses.

If we analyze the evolution of bonuses contribution to wage variance, we can say that this hasn't been clearly increasing from 2002 to 2010, except for the case of Spain. Despite this evolution, the final result is that countries with much more centralized collective bargaining have higher contribution of bonuses in wage variance, those countries with a less centralized collective bargaining and with less weight of regular bonuses in total bonuses. This would be a good explanation for the evolution of Finland, which has a much more decentralized collective bargaining. But this would be true only in the case of regular bonuses. It would be necessary the breakdown of bonuses for the SES 2006 and SES 2010, to get much consistent results with literature.

Obviously, apart from bonuses, other factors could be influencing in wage inequality of these countries. For example, structural factors or their starting point. If we compare situation with the SES 2002 dataset with the situation

with SES 2010 dataset, we can say that France as Poland (only slightly) have improved their situation in terms of Gini Index, meanwhile Spain, Portugal have worsened their situation. Romania has remained at highest level of Gini Index, between 2002 and 2010. Finland is a special case because it has worsened their situation only in the case of gross annual salary Gini Index, but not for the case of proxy base pay Gini Index.

So, we can conclude that Variable pay systems can imply a bigger deterioration of wage inequality especially in countries with general wage inequality problems. This could be the case for countries with Gini Index up 0.35 like Spain, Portugal and Romania.

For some authors (Lemieux et al, 2007) if variable pay or pay for performance can explain an important part of wages variance, it could happen that complementarities in production may be less important than individual's contribution to output.

But some other literature link wage inequality with skill-biased technical change (Acemoglu, 2002). And in this case we have to analyze deeper complementarities in production. However, variable forms of compensation can be understood as a form of "technology" to adapt to new circumstances (Lemieux et al, 2007).

CHAPTER 5

CONCLUSIONS

The difficulty lies not so much in developing new ideas as in escaping from old ones.

John Maynard Keynes

5.1 Summarizing

In this last chapter, we summarize the main important results from this thesis.

Variable remuneration systems analysis is not a very common issue in Labor Economics. It is much more use to find it in Industrial Relations but without a Labor Economics perspective.

For this reason, the main general goal of this dissertation is to include Variable Pay Systems into the Labor Economics analysis and to include some aspects of Labor Economics into Industrial Relations analysis of the Variable Pay Systems.

In Chapter 1, we have developed a literature review about definition and classification of Variable Pay Systems. This is important, because one of the main problems to manage with this issue is its delimitation. Moreover, a wide justification to research variable compensation systems is done. But the most important contribution of this chapter is, on the one hand, to link the introduction of Variable Pay Systems with globalization and its consequences, in terms of different elements like searching for improvements in competitiveness by companies and financialization. And, also, to link the introduction of Variable Pay Systems with last economic crisis. So, Variable Pay Systems would be a consequence of the changes in general economic framework of world economy. And, on the other hand, Variable Pay Systems would be the cause of the improving in motivation employees (not clear), productivity and in competitiveness of the firms. So we are in front a situation of reversal causation. The same reversal causation that we find if we look into the relationship between Variable Pay Systems and collective bargaining and wage determination: variable remuneration schemes have influence in wage determination and in collective bargaining, but wage determination and

collective bargaining have influence and the characteristics of variable remuneration schemes.

This is a key chapter to understand the thesis because it is the justification of the following analysis.

In Chapter 2, we analyze the use of Variable Pay Systems in the case of nine companies from Spanish Automotive industry, which become a relevant sector for variable remuneration issue. We use a case study taking information from interviews, and collective agreement legal text together with the economic information of our nine companies, from Sabi database. We observe the evolution of these economic variables from 2010 to 2011. In this period, we have the latest updated data in our database and between 2010 to 2011 most of the companies introduced VPS schemes. With data before 2010 the consequences of the economic crisis could be included and it was more difficult to isolate the impact of Variable Pay System.

With few observations is not possible to apply any kind of quantitative methodology, so we decide to use a qualitative methodology like Multi Value Qualitative Comparative Analysis.

The main conclusion of this chapter is that the introduction of, what we called, most advanced and second most advanced VPS schemes in Spanish Automotive Industry companies, is linked to different elements: belonging to transnational corporation; all staff are affected (inclusive VPS); VPS, with a percentage of 2.4% on average, are additioned to gross annual salary; positive economic results in 2011 and improvement from 2010; low growth rates (decreasing productivity) (companies C1, C4 and C6) or decreasing rates (increasing productivity) (company C2) of Unit Labor Cost, which implies a competitiveness improvement.

So, we can observe that, in some companies, there is a relationship between the introduction of Variable Pay Systems and the strategies of multinational companies looking for higher levels of competitiveness. However, if we considered productivity as a proxy of motivation, the introduction of VPS is not always connected with higher levels of productivity (like in the case of companies C1,C4 and C6).

Finally, a reverse causality can be found, because the evolution of Economic Results and the evolution of Nominal Unit Labor from the companies may

determine the introduction or not of Variable Pay Systems. But, at the same time, the introduction of Variable Pay Systems may determine the evolution of Economic Results and the evolution of Nominal Unit Labor.

The main contribution of this chapter is to apply case study methodology together with techniques of Multi Value Qualitative Comparative Analysis (mvQCA) in the case of Spanish Automotive Industry. And moreover to include to this analysis variables from Sabi database with information from companies. In the case of Spain, there is no any database which put together information about wages and collective bargaining and variables from companies.

In Chapter 3 we look into if there is any kind of connection between Variable Pay Schemes and collective bargaining regimes. To do it, we used three last waves (2002, 2006, 2010) of SES database, comparing six different European countries: Finland, Spain, Portugal, France, Romania and Poland. The main criterion that we followed to choose these countries was their availability to get information about Bonuses and their different collective bargaining regimes. So according to ICTWSS 4.0 database (Visser J., 2013), we got one country for every level. From more centralized collective bargaining regime to less centralized collective bargaining regime, the situation in 2002 was: Finland number 5, Spain number 4, Portugal number 3, France number 2, Romania number 2 and Poland number 1.

Using SES database to work with Variable Pay Systems has some problems. We use a probit regression where a proxy to Variable Pay Systems which is “Annual Bonuses” is dependent variable. This variable includes regular bonuses, productivity bonuses and profit sharing premiums. And we only could get its break down for 2002 wave: in 2006 wave and in 2010 wave is not possible to know which part of “Annual bonuses” are regular bonuses, which part are productivity bonuses and which part are profit sharing.

First of all, if we compare the situation with data from 2002 wave to the situation with data from 2010 wave, can observe that only two countries have changed their collective bargaining regimes. On the one hand, Finland, which changes from number 5 to number 3 in the classification, becoming a country with a much more decentralized collective bargaining regime. And on the other hand, Romania which changes from number 2 to number 3, becoming a country with a much more centralized collective bargaining regime.

If we compare countries with more centralized collective bargaining regimes with countries with more decentralized collective bargaining, using data from three waves, we can observe some important results. In centralized bargaining regimes countries, bonuses only depends on few number of variables, because most of them (regular bonuses) are include in collective agreement. But as bargaining regimes become much more decentralized, then bonuses depend on a larger number of variables, because bonuses (regular bonuses) in these situations they are not included in collective agreements.

Summarizing the information from all countries, the probability of earning bonuses is higher for people with good levels of education, with seniority, for certain kinds of occupation, for full-time workdays, indefinite contracts, for larger companies in certain sectors; especially relevant for profit sharing premiums. Collective agreement has become a relevant variable for more countries if we compare the situation in the SES 2010 with the situation in the SES 2002: especially in the case of collective agreements at enterprise level.

The main contribution of this chapter is to analyze the connection between Variable Pay Systems and collective bargaining regimes using SES database, taking “Annual bonuses” as a proxy variable. Other literature has looked into this relation with other database and sometimes focusing in situation only in UK economy.

In Chapter 4, using three waves of SES, first we have analyzed the main relevant variables of wage determination, applying OLS regression to a Mincerian wage equation in a extended way, which includes a proxy of a Variable Pay Systems, as an independent variable. We have calculate this regression through three different specifications: model A, controlling for human capital variables and Variable Pay Systems, model B, controlling for human capital variables, workplace variables, establishment variables and Variable Pay Systems and model C, controlling for human capital variables, workplace variables, fixed effects for establishments and Variable Pay Systems. Afterwards, we use decomposition of wage variance through difference of the R^2 coefficient to look what is the contribution of bonuses to wage variance. Finally, after calculate Gini Index, we use Fields decomposition to evaluate which is the contribution of bonuses to wage inequality.

Our conclusion shows that in five countries of our analyzed group, Portugal, Poland, Spain, Romania and Finland, bonuses are explaining the most important part in wage variance. And in these same five countries, bonuses would have the highest incidence in gross annual salary inequality, following Fields decomposition. Some relevant results can be obtained:

·With data from 2002 SES, in Portugal, bonuses would explain 72.35% of total inequality and the 18.73% the remaining factors. In the case of Poland, bonuses would explain 42.45% of the total inequality (83.87%).

·With data from 2006 SES, in Portugal, bonuses would explain 74.64% of total inequality and the 19.46% the remaining factors. In the case of Poland, bonuses would explain 83.76% of the total inequality (94.55%) and the remaining factors the 10.79%.

·With data from 2010 SES, in Portugal, bonuses would explain 51.5% of total inequality and the 32.92% the remaining factors. In the case of Spain, bonuses would explain 51% of the total inequality (78.8%) and the remaining factors the 27.8%.

If we analyze the evolution of bonuses contribution to wage variance, from 2002 to 2010, we can't see a clear pattern. Only we can say that countries with much more centralized collective bargaining have higher contribution of bonuses in wage variance, than countries with a less centralized collective bargaining and with less weight of regular bonuses in total bonuses. This would be a good explanation for the evolution of Finland, which has a much more decentralized collective bargaining. But this would be true only in the case of regular bonuses. It would be necessary the breakdown of bonuses for the SES 2006 and SES 2010 and compare, to get much consistent results with literature.

The main contribution of Chapter 4 is to introduce Variable Pay Systems in Labor Economics field and to analyze its influence on wage determination and on wage inequality, using SES database.

5.2 Further developments

As we said earlier, thesis is just the beginning of a journey and a lot of possibilities to continue can be opened. Here there are some of them.

In Chapter 2, first, we must solve the problem of reverse causality. Second, it would be very interesting to get information from other companies from other sectors and from other countries and to develop a comparative study. And it must be useful achieve enough observations to be able to apply quantitative methodologies. Then compare the results with the previously obtained in this chapter and check their level of robustness.

In Chapter 3, we obtained, in general, consistent results with some literature. But these results can be improved, reducing the relevant sample for some countries, and going deeper into the relationship between some variables. We have a wide number of observations so we can take more profit from them. And moreover, we can deepen the comparison between the situation in the three years (2002, 2006 and 2010). Another point that we can consider is the introduction of fixed effects of establishment.

In Chapter 4, one possible further development would be applying Shapley approach, in order to evaluate decomposition of inequality. In this approach, the contribution of a single factor can be assessed as the difference between the overall income inequality and the inequality that would be observed without this factor, getting the marginal impact of each factor (Mana R. and Regoli A., 2012). In this case, the introduction of fixed effects by establishment could be taken into account. And other further development could be considered cross sectional dataset as pooled of independent cross section, using dummy variables for every year.

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APPENDICES

A. Chapter 2

Questionnaires

EMPLOYEE REPRESENTATIVE QUESTIONNAIRE

A. Background information

B. Analysis of the Company Compensation System

1) How would you define a Variable Pay System?

2) Features Variable Remuneration Systems implemented or being implemented in the company:

2.1) Classification

2.1.1) Remuneration according to quantitative aspects – Payment By Results (PBR). (Relationship between remuneration and level of productivity, the level of financial results for the company or others. Objective evaluation). *Traditional Variable Pay System.*

2.1.2) Remuneration according to qualitative aspects – Performance Related Pay (PRP). (Relationship between remuneration and the achievement of certain objectives. Subjective evaluation). *New Variable Pay System.*

2.1.3) Financial Participation Systems (FPS). (Company profit sharing and systems for acquiring company shares). *New Traditional Variable Pay System.*

2.2) How many workers are covered by Variable Pay Systems? What percentage of the total staff are they?

2.3) Do they cover all categories of workers or only management and middle management?

2.4) Are they included in Collective Bargaining or not?

2.5) Is the Variable Pay added to the Basic Salary or does it substitute some part of the Basic Salary?

2.6) What percentage of the Total Salary does the Variable Pay represent?

2.7) How often is Variable Pay paid?

3) Position of the union

3.1) What is the union's position with regard to Variable Pay Systems in general? And in the case of the company?

3.2) Does the union consider Variable Pay Systems to be a new thing or something that has always existed?

3.3) Would your union agree to form part of the negotiations with company management to decide the criteria that should apply to Variable Pay Systems?

3.4) Would your union be more likely to defend Variable Pay Systems in order to achieve certain collective objectives for Collective PRP than Individual PRP?

3.5) In a situation such as the current crisis, would your union be prepared to accept Variable Pay Systems in exchange for avoiding job losses, even if this involved modifications to the Basic Salary?

3.6) Do you know any other companies in the sector or in other sectors they are introducing or considering the introduction of Variable Pay Systems?

3.7) Do you know the level of introduction of Variable Pay Systems in other countries?

4) Perception by workers

4.1) What is your opinion on the workers' perceptions of Variable Pay Systems that reach your union?

4.2) Would the workers be prepared to accept Variable Pay Systems in order to keep their jobs?

5) Crisis and company management

5.1) What measures is the management taking with regard to the current economic crisis?

5.2) What alternative measures has your union suggested?

5.3) What is the current state of negotiations with company management?

MANAGEMENT QUESTIONNAIRE

A. Background information

1) How would you define a Variable Pay System?

2) Features of Variable Pay Systems implemented or being implemented in the company:

3) Position of the company management

3.1) What is the company's position with regard to Variable Pay Systems in general? What benefits do they bring the company?

3.2) Are Variable Pay Systems new or have they always existed in the company?

3.3) Would the company agree to the union forming part of the negotiation to decide the criteria which should apply to Variable Pay Systems? In practice have meetings taken place with the union?

3.4) Would the company be more likely to defend Individual PRP than Collective PRP in order to achieve certain collective goals?

3.5) In the current crisis do you think Variable Pay Systems are a good tool for avoiding job losses? Do you think that because of that the unions are more likely to accept them than in other circumstances?

3.6) Do you know any other companies in the sector or in other sectors that are introducing or considering the introduction of Variable Pay Systems?

3.7) Do you know the level of introduction of Variable Pay Systems in other countries?

4) Perception by workers

4.1) What is your opinion on the workers' perceptions of Variable Pay Systems?

4.2) Would the workers be prepared to accept Variable Pay Systems in order to keep their jobs?

5) Crisis and company management

5.1) What measures has the company introduced with regard to the current economic crisis?

5.2) What other type of measures is the company contemplating?

5.3) What is the current state of negotiations with the unions?

5.4) What does the company think about the Spanish government's Labour Reforms? What are the positive and negative effects that these will have on the company?

Description of variables

Descriptive Statistics

Source from Interviews and Legal Texts.

<u>Variable</u>	<u>Definition</u>	<u>Values</u>
TNC	Belonging to a worldwide group and absence of a CA at company level	0 Not belonging to a worldwide group 1 Belonging to a worldwide group and CA at company level

DINT	Date of introduction of VPS	0 In the last Collective Agreement 1 Before last Collective Agreement
CNONCP	Becoming consolidated or non-consolidated pay	0 Consolidated pay 1 Non-consolidated pay 2 Consolidated and non-consolidated pay
WFC	Workforce covered by VPS	0 Only staff out of Collective Agreement 1 Further, staff within the Collective Agreement
PGAS	Maximum Percentage of Gross Annual Salary that VPS suppose	
AGAS	Addition of VPS to Gross Annual Salary	0 VPS is added to Gross Annual Salary 1 VPS is not added to GAS: it replaces a part 2 VPS sometimes is added to GAS and sometimes not

Independent variables. Multi-value minimization

Source from SABI database.

ECRSLT	Economic results in 2011 and deterioration from 2010	0 Negative results in 2011 + evolution compared to 2010 1 Negative results in 2011 + improvement from 2010 2 Positive results in 2011 + deterioration from 2010 3 Positive results in 2011 + improvement from 2010
--------	--	---

ULC Evolution of Unit Labor Costs between 2010 and 2011:

- 0 Increasing ULC: productivity is decreasing and labor costs are increasing
- 1 Increasing ULC: productivity is decreasing and labor costs are decreasing
- 2 Increasing ULC: productivity is increasing and labor costs are increasing
- 3 Decreasing ULC: productivity is decreasing and labor costs are decreasing
- 4 Decreasing ULC: productivity is increasing and labor costs are increasing
- 5 Decreasing ULC: productivity is increasing and labor costs are decreasing

PRODTY Evolution of Productivity between 2010 and 2011

- 0 Decreasing productivity
- 1 Increasing productivity

LCOST Evolution of Labor Costs between 2010 and 2011

- 0 Decreasing labor costs
- 1 Increasing labor costs

IULC Growth rates of ULC between 2010 and 2011

IPRODTY Growth rates of Productivity between 2010 and 2001

ILCOST Growth rates of Labor costs between 2010 and 2001

Dependent variables

Source from Interviews and Legal Texts.

LVPS Features of last VPS introduced

0 No changes wages increases + No VPS introduced

1 No changes wages increases + Coll.+Individual VPS

2 No changes in wages increases +Collective VPS

3 Changes in wages increases + Collective VPS

4 Changes in wages increases + Coll..+Individual VPS

Evolution Economic Results (2010-2011) (thousand€)

Companies	2010	2011
C1	55,830	122,771
C2	-103,900	-61,500
C3	103,422	84,888
C4	-132,777	-324,438
C5	4,146	-42,810
C6	49,554	58,025
C7	51,521	25,903
C8	-200,034	-53,433
C9	-18,493	-58,809

Source: SABI data base

Evolution of Nominal Unit Labor Costs (2010-2011) (%)

Companies	NULC growth rate
C1	4.6%
C2	-12.4%
C3	-0.78%
C4	120%
C5	8.1%
C6	1.3%
C7	22.5%
C8	-22%

C9 21%

Source: Own elaboration from SABI Database information

Results

Tosmana Report

Algorithm: Graph-based Agent

Settings:

Minimizing Value 1 2
including R

Truth Table:

ECRSLT	IPRODTY	IULC_2	ILCOST_2	LVPS	CASES
2	1	1	2	2	C1
0	2	2	1	2	C2
1	1	2	2	1	C3
0	0	0	2	2	C4
0	1	1	1	0	C5
2	1	2	1	2	C6
1	1	0	1	1	C7
0	1	2	2	0	C8
0	1	0	2	0	C9

Result: (all)

ECRSLT{1,2}+IPRODTY{0,2}
(C1+C3+C6+C7) (C2+C4) Created with Tosmana Version 1.3.2

B. Chapter 3

Table 45.3 (Complete information 13.3) Annual bonuses 2002 (marginal effects)

MARGINAL EFFECTS	FINLAND	SPAIN	FRANCE	ROMANIA	POLAND
ANNUAL BONUSES 2002	coefficients	marginal effects			
INDIVIDUAL FACTORS					
Male	0.0484 (0.0311)	0.00103*** (0.000298)	-0.00693*** (0.00205)	-0.0143*** (0.00287)	-0.0270*** (0.00113)
upsecondeduc1	0.0488 (0.0334)	-0.0165 (0.0116)	0.0226*** (0.00283)	0.0596*** (0.0114)	0.00663*** (0.00194)
bachemasteduc	-0.0608 (0.0535)	0.000127 (0.000592)	0.0247*** (0.00397)	0.123*** (0.0137)	0.0221*** (0.00289)
doctoraleduc	-0.0884 (0.249)	0.00263 (0.00134)	0.0359*** (0.00778)	0.149*** (0.0222)	0.0308*** (0.00254)
age4049	0.238*** (0.0589)	0.000944 (0.000873)	0.0239* (0.00996)	-0.0143 (0.0130)	-0.0208*** (0.00328)
age5059	0.266*** (0.0625)	0.00151 (0.000920)	0.0103 (0.0102)	-0.00333 (0.0133)	-0.00451 (0.00331)
age60more	0.762*** (0.175)	0.000179 (0.00136)	-0.0532*** (0.0142)	-0.0961*** (0.0171)	
seniority	3.558*** (0.210)	0.000380*** (0.0000544)	0.00911*** (0.000333)	0.0250*** (0.000471)	0.0149*** (0.000188)
seniority2	-0.0709*** (0.00429)	- (0.00000862***)	-0.000180*** (0.00000983)	-0.000603*** (0.0000159)	-0.000396*** (0.00000599)
teachingprof1			-0.306** (0.111)	0.181*** (0.0268)	0.0641*** (0.0107)
teachingasprof1			-0.0700 (0.0415)	0.214*** (0.0284)	0.0624*** (0.0134)
WORKPLACE FACTORS					
parttimewd	-0.107* (0.0480)	-0.00578*** (0.000661)	-0.0808*** (0.00322)	-0.0861*** (0.0157)	
temporaryc	-0.145*** (0.0306)	-0.00154*** (0.000353)	-0.0917*** (0.00603)	-0.200*** (0.00845)	
ESTABLISHMENT FACTORS					
Manufacture of wood, pulp paper	0.821*** (0.163)	0.0000606 (0.000792)	0.0781*** (0.0152)	-0.127*** (0.0103)	
Manufacture of medical, precision instruments	0.224 (0.221)	0.000880 (0.00127)	0.0498** (0.0162)	0.0766** (0.0194)	0.0478*** (0.0125)
Sale, maintenance and repair of motor vehicle	1.310*** (0.162)	-0.00643*** (0.00110)	0.0574*** (0.0133)	-0.0303*** (0.00946)	-0.00193 (0.0109)
Retail trade	2.449*** (0.189)	-0.00567*** (0.00105)	0.0874*** (0.0134)	-0.0473*** (0.0104)	0.0309** (0.0114)
Land transport, air transport	0.514** (0.172)	-0.00180 (0.000983)	0.00881 (0.0151)	0.0481*** (0.0103)	0.0922*** (0.0103)
Supporting and auxiliary transport activities	0.767*** (0.160)	-0.00254* (0.00108)	0.0702*** (0.0144)	0.267*** (0.0115)	0.192*** (0.0103)
Real estate activities	1.472*** (0.175)	-0.00244 (0.00141)	0.0753*** (0.0134)	0.0348** (0.0111)	0.114*** (0.0102)
Mining and quarrying	-0.165 (0.385)	0.000613 (0.000848)	0.113*** (0.0147)	0.167*** (0.0119)	0.0964*** (0.0103)
Manufacture of coke, refined	-0.0640	0.000502	0.111***	0.106***	0.149***

age4049	0.233*** (0.0590)	0.000834 (0.00103)	0.0281 (0.0184)	-0.0169 (0.0133)	-0.149*** (0.0243)
age5059	0.251*** (0.0627)	0.00159 (0.00108)	0.0181 (0.0186)	-0.000919 (0.0136)	-0.0457 (0.0244)
age60more	0.827*** (0.176)	0.000371 (0.00155)	-0.0728** (0.0228)	-0.0938*** (0.0172)	
seniority	3.734*** (0.211)	0.000500*** (0.0000612)	0.0186*** (0.000556)	0.0237*** (0.000468)	0.0883*** (0.00145)
seniority2	-0.0743*** (0.00434)	0.0000113*** (0.00000187)	-0.000352*** (0.0000162)	-0.000579*** (0.0000158)	-0.00263*** (0.0000473)
teachingasprof1			-0.00177 (0.128)	0.233*** (0.0278)	0.460*** (0.0917)
extractionbuilwork1	-0.380*** (0.0729)		-0.0179 (0.121)	0.123*** (0.0216)	0.221** (0.0810)
WORKPLACE FACTORS					
partialtimewd	-0.0763 (0.0478)	-0.00637*** (0.000721)	-0.116*** (0.00471)	-0.0828*** (0.0156)	
temporary	-0.172*** (0.0306)	-0.00154*** (0.000399)	-0.146*** (0.00880)	-0.192*** (0.00814)	
ESTABLISHMENT FACTORS					
Manufacture of wood, pulp paper	0.821*** (0.165)	-0.000208 (0.000883)	0.127*** (0.0205)	-0.112*** (0.0102)	
Retail trade	2.453*** (0.189)	-0.00766*** (0.00118)	0.103*** (0.0176)	-0.0512*** (0.0103)	
Land transport, air transport	0.562** (0.173)	-0.00290* (0.00117)	0.0701*** (0.0188)	0.0478*** (0.0102)	-0.453*** (0.0218)
Supporting and auxiliary transport activities	0.783*** (0.162)	-0.00348** (0.00120)	-0.0289 (0.0194)	0.241*** (0.0118)	-0.809*** (0.0240)
Real estate activities	1.599*** (0.177)	-0.00245 (0.00145)	0.145*** (0.0173)	0.0280* (0.0109)	-0.438*** (0.0205)
Other business activities	0.834*** (0.162)	-0.00904*** (0.00115)	0.0236 (0.0171)	0.147*** (0.00999)	0.732*** (0.0179)
Mining and quarrying	-0.0855 (0.392)	0.000392 (0.000986)	0.234*** (0.0205)	0.145*** (0.0118)	
Manufacture of coke, refined petroleum	-0.0171 (0.168)	0.0000393 (0.000783)	0.0690*** (0.0180)	0.0932*** (0.0104)	
Manufacture of other non-metallic mineral products	0.0208 (0.177)	0.00107 (0.000792)	0.231*** (0.0206)	0.145*** (0.0114)	
Manufacture of basic metals and fabricated metal products	0.565*** (0.165)	-0.000883 (0.000897)	0.0637*** (0.0180)	0.106*** (0.00980)	-1.670*** (0.0670)
Manufacture of transport equipment	0.00269 (0.179)	0.00114 (0.000775)	0.134*** (0.0188)	0.203*** (0.00991)	-0.551*** (0.0653)
Electricity, gas and water supply	0.451* (0.181)	-0.00273 (0.00140)	0.180*** (0.0195)	0.0603*** (0.0109)	-1.006*** (0.0215)
Hotels and restaurants	2.765*** (0.228)	-0.00709*** (0.00126)	-0.0521* (0.0213)	0.204*** (0.0124)	-0.525*** (0.0338)
Financial intermediation	2.393*** (0.238)	-0.00410*** (0.00112)	0.125*** (0.0174)	0.292*** (0.0111)	
Public administration and defence				0.326*** (0.00933)	1.485*** (0.0129)
Education		-0.00448*** (0.00133)		0.342*** (0.0125)	0.586*** (0.0103)
size50249		0.000553 (0.000358)	0.182*** (0.00442)	0.0821*** (0.00304)	-0.382*** (0.00819)

size250m		-0.000843*	0.312***	0.295***	-1.897***
		(0.000407)	(0.00399)	(0.00334)	(0.00937)
privatectrl	0.351***	-0.000693	-0.180***	-0.240***	
	(0.0485)	(0.000607)	(0.00605)	(0.00372)	
nationalmarket		-0.00168***		0.0177***	
		(0.000322)		(0.00320)	
eumarket		-0.00528***		0.0359***	
		(0.000802)		(0.00490)	
worldmarket		-0.000861		-0.0107	
		(0.000592)		(0.00553)	
indindustregca		0.00222***		0.104***	
		(0.000353)		(0.0101)	
enterpriseca		0.00201***		-0.0323***	
		(0.000478)		(0.00391)	
cons	-0.459*				0.0154
	(0.178)				(0.0819)
N	124751	217116	121178	230149	308012
Pseudo R-Squared	0.66	0.10	0.17	0.24	0.50
Percent correctly predicted					
5%		99.08%	72.99%	75.16%	90.03%

* p < 0.05, ** p < 0.01, *** p < 0.001

Table 47.3 (Complete information 18.3) Productivity bonuses 2002 (marginal effects)

MARGINAL EFFECTS PRODUCTIVITY BONUSES 2002	FINLAND	SPAIN	PORTUGAL	FRANCE	ROMANIA
INDIVIDUAL FACTORS					
Male	-0.00813*	0.0259***	0.0128***	0.0276***	-0.00189*
	(0.00347)	(0.00233)	(0.00312)	(0.00310)	(0.000929)
shtcycletereduc	0.0546***	0.0525***	0.0176	-0.00174	0.00597
	(0.00504)	(0.00405)	(0.00903)	(0.00551)	(0.00522)
bachemasteduc	0.0882***	0.0589***	0.0239**	0.00271	0.0121*
	(0.00598)	(0.00449)	(0.00754)	(0.00574)	(0.00472)
doctoraleduc	0.0910***	0.112***		0.0344**	0.00692
	(0.0247)	(0.0207)		(0.0133)	(0.00637)
age2029	0.0791***	-0.0166	0.0305**	0.0480**	-0.00940
	(0.0122)	(0.00926)	(0.00977)	(0.0177)	(0.00660)
age3039	0.109***	0.00631	0.0314**	0.0546**	-0.0156*
	(0.0123)	(0.00934)	(0.00991)	(0.0179)	(0.00659)
age4049	0.103***	0.0129	0.0244*	0.0323	-0.0193**
	(0.0124)	(0.00950)	(0.0102)	(0.0180)	(0.00660)
age5059	0.102***	0.0221*	0.0201	0.0100	-0.0183**
	(0.0125)	(0.00975)	(0.0106)	(0.0181)	(0.00665)
age60more	0.0874***	0.00990	0.00326	-0.0735***	-0.0292***
	(0.0158)	(0.0114)	(0.0130)	(0.0201)	(0.00709)
seniority	0.00698***	0.00507***	0.00507***	0.00450***	0.00123***
	(0.000489)	(0.000367)	(0.000558)	(0.000503)	(0.000155)
seniority2	-0.000116***	-	-0.000150***	-	-0.0000255***
	(0.0000142)	(0.0000108)	(0.0000169)	(0.0000143)	(0.00000513)
WORKPLACE FACTORS					
partialtimewd	-0.0656***	-0.0245***	-0.0283**	-0.0731***	-0.00667
	(0.00549)	(0.00370)	(0.0105)	(0.00390)	(0.00477)
temporaryc	-0.146***	-0.0436***	0.0226***	-0.106***	-0.0182***
	(0.00513)	(0.00275)	(0.00453)	(0.00682)	(0.00216)
apprenticec	-0.111***	-0.0285*	0.00741	-0.144***	

yesupervisory	(0.0141)	(0.0139)	(0.00703)	(0.00982)	
		0.0209***	0.00985		-0.00373
		(0.00233)	(0.00590)		(0.00447)
ESTABLISHMENT FACTORS					
Manufacture of wood, pulp paper	0.134***	-0.0589***	0.0355***	0.0150	0.000234
	(0.0191)	(0.0103)	(0.00761)	(0.0184)	(0.00264)
Manufacture of office machinery, computers	0.184***	0.00235	0.00649	-0.00694	0.0288***
	(0.0191)	(0.0107)	(0.00720)	(0.0159)	(0.00342)
Sale, maintenance and repair of motor vehicle	-0.135***	0.0234*	0.0936***	0.117***	0.0253***
	(0.0189)	(0.0104)	(0.00804)	(0.0152)	(0.00290)
Supporting and auxiliary transport activities	-0.132***	0.00865	0.185***	0.139***	0.0253***
	(0.0193)	(0.0109)	(0.0124)	(0.0170)	(0.00371)
Real estate activities	-0.119***	0.00129	0.108***	-0.0129	0.0242***
	(0.0195)	(0.0130)	(0.0112)	(0.0151)	(0.00320)
Other business activities	-0.154***	-0.0615***	0.124***	-0.0223	0.0444***
	(0.0191)	(0.00986)	(0.0120)	(0.0148)	(0.00348)
Manufacture of coke, refined petroleum	-0.0766***	0.0292**	0.0529***	-0.00707	0.000983
	(0.0194)	(0.00975)	(0.00865)	(0.0155)	(0.00244)
Manufacture of other non-metallic mineral products	-0.0784***	-0.0150	0.117***	0.00663	0.0556***
	(0.0211)	(0.0104)	(0.0111)	(0.0192)	(0.00472)
Manufacture of basic metals and fabricated metal products	-0.219***	-0.0318**	0.0973***	0.0456**	0.0403***
	(0.0191)	(0.0100)	(0.00892)	(0.0158)	(0.00312)
Manufacture of transport equipment	0.158***	-0.0316**	0.0318***	-0.0495**	0.0220***
	(0.0207)	(0.0104)	(0.00761)	(0.0161)	(0.00289)
Electricity, gas and water supply	0.161***	0.0532***		0.0193	0.0361***
	(0.0226)	(0.0115)		(0.0167)	(0.00346)
Financial intermediation	-0.0337	0.289***	0.123***	0.0816***	0.0401***
	(0.0199)	(0.0106)	(0.0102)	(0.0152)	(0.00425)
Public administration and defence					0.0975***
					(0.00405)
size50249		0.0599***	0.0744***	0.0683***	0.0107***
		(0.00251)	(0.00319)	(0.00369)	(0.000975)
size250m		0.137***	0.118***	0.115***	0.0248***
		(0.00275)	(0.00382)	(0.00341)	(0.00113)
privatectl	0.0260***	-0.0989***	0.0868***	0.0306***	-0.0212***
	(0.00536)	(0.00452)	(0.00395)	(0.00595)	(0.00135)
nationalmarket		0.0346***	0.0366***		0.0175***
		(0.00241)	(0.00369)		(0.00103)
eumarket		0.0297***	0.0266***		0.0566***
		(0.00421)	(0.00543)		(0.00265)
worldmarket		0.0337***	0.0277***		0.00988***
		(0.00396)	(0.00527)		(0.00184)
enterpriseca	0.526***	0.0174***	0.0367***		-0.000413
	(0.0305)	(0.00308)	(0.00807)		(0.00123)
localunitca		0.0697***			
		(0.00612)			
othertca		0.0142**	0.0421***		
		(0.00545)	(0.00622)		
N	125169	217147	62566	121178	230149
Pseudo R-Squared	0.17	0.14	0.07	0.05	0.099
Percent correctly predicted	72.63%	77.68%	85.20%	71.75%	94.40%
Standard errors in parentheses					
* p < 0.05, ** p < 0.01, *** p < 0.001					

Table 48.3 (Complete information 20.3) Profit-sharing premiums 2002 (marginal effects)

MARGINAL EFFECTS	PORTUGAL	FRANCE	ROMANIA	POLAND
PROFIT SHARING BONUSES				
2002				
INDIVIDUAL FACTORS				
Male	0.0127*** (0.00228)	-0.0170*** (0.00372)	-0.00376** (0.00115)	0.00151*** (0.000380)
upsecondeduc1	0.0198*** (0.00363)	0.0297*** (0.00479)	-0.00200 (0.00439)	0.000769 (0.000655)
Shtcycletereduc	0.0308*** (0.00777)	0.0486*** (0.00646)	-0.00185 (0.00610)	
Bachemasteduc	0.00591 (0.00520)	0.0563*** (0.00674)	0.00624 (0.00569)	0.00832*** (0.000964)
Doctoraleduc		0.0572*** (0.0158)	-0.0376*** (0.00549)	0.00296*** (0.000874)
age4049	-0.00137 (0.0115)	0.0301 (0.0216)	0.0168*** (0.00503)	-0.0179*** (0.000998)
age5059	0.0113 (0.0119)	0.0356 (0.0218)	0.0233*** (0.00517)	-0.0120*** (0.000993)
Seniority	0.00875*** (0.000450)	0.0114*** (0.000598)	0.00711*** (0.000186)	0.00265*** (0.0000626)
seniority2	-0.000240*** (0.0000132)	-0.000219*** (0.0000169)	-0.000167*** (0.00000607)	-0.0000619*** (0.00000186)
physicalenginasprof1	-0.0164 (0.00930)	0.209* (0.0940)	-0.00832 (0.0145)	0.0409*** (0.00837)
offclerks1	-0.0278*** (0.00787)	0.112 (0.0939)	0.0156 (0.0148)	0.0336*** (0.00836)
metalmachinerywork1	-0.0523*** (0.00864)	0.133 (0.0941)	0.00877 (0.0147)	0.0341*** (0.00838)
saleservicesoccup1	-0.0555*** (0.00948)	-0.0453 (0.0941)	0.00579 (0.0148)	0.0328*** (0.00839)
WORKPLACE FACTORS				
Partialtimewd	-0.0409*** (0.00688)	-0.0402*** (0.00483)	-0.00927 (0.00611)	
Temporaryc	-0.00291 (0.00402)	-0.127*** (0.00872)	-0.0227*** (0.00373)	
Publishing, Printing	0.0493*** (0.0109)	0.0590** (0.0200)	0.0727*** (0.00867)	0.0475*** (0.00259)
Manufacture of office machimery, computers	0.00944 (0.00744)	0.0593*** (0.0175)	0.0509*** (0.00433)	0.0172*** (0.00264)
Sale, maintenance and repair of motor vehicle	0.0805*** (0.00896)	0.137*** (0.0167)	0.0572*** (0.00372)	0.0107*** (0.00258)
Retail trade	-0.0142 (0.00982)	0.222*** (0.0171)	0.0104** (0.00332)	0.0145*** (0.00268)
Supporting and auxiliary transport activities	-0.0648*** (0.00576)	0.0510** (0.0181)	0.163*** (0.00651)	0.0406*** (0.00238)
Real estate activities	0.0358** (0.0114)	0.0953*** (0.0168)	0.0630*** (0.00446)	0.0328*** (0.00239)
Other business activities	0.0360** (0.0114)	0.0809*** (0.0164)	0.0340*** (0.00368)	0.0240*** (0.00249)
Mining and quarrying	-0.0148 (0.00778)	0.234*** (0.0240)	0.0336*** (0.00404)	0.0308*** (0.00239)
Manufacture of coke, refined petroleum	0.0312*** (0.00842)	0.257*** (0.0173)	0.0534*** (0.00386)	0.0404*** (0.00236)
Manufacture of other non-metallic mineral products	0.0117 (0.00920)	0.260*** (0.0222)	0.0441*** (0.00420)	0.0187*** (0.00269)

Manufacture of basic metals and fabricated metal products	-0.0103 (0.00715)	0.125*** (0.0174)	0.0114*** (0.00263)	-0.0481*** (0.00418)
Electricity, gas and water supply		0.465*** (0.0187)	0.0881*** (0.00448)	0.0233*** (0.00238)
Financial intermediation	0.317*** (0.0142)	0.353*** (0.0167)	0.311*** (0.00889)	0.0656*** (0.00242)
size50249	0.0213*** (0.00256)	0.304*** (0.00367)	0.0161*** (0.00109)	0.0220*** (0.000591)
size250m	0.0633*** (0.00327)	0.466*** (0.00307)	0.0695*** (0.00149)	0.0431*** (0.000584)
privatectrl	-0.0929*** (0.00653)	-0.140*** (0.00798)	-0.0341*** (0.00164)	-0.0136*** (0.000474)
nationalmarket	0.0485*** (0.00276)		0.0124*** (0.00121)	
Eumarket	0.0468*** (0.00479)		0.0269*** (0.00203)	
Worldmarket	0.0201*** (0.00401)		0.0537*** (0.00251)	
Enterpriseca	0.0329*** (0.00623)		0.0110*** (0.00169)	
N	62586	121178	210384	634465
Pseudo R-Squared	0.43	0.21	0.18	0.16
Percent correctly predicted	92.92%	71.65%	91.66%	95.80%
Standard errors in parentheses				
* p < 0.05, ** p < 0.01, *** p < 0.001				

Table 49.3 (Complete information 26.3) Annual Bonuses 2006 (marginal effects)

MARGINAL EFFECTS ANNUAL BONUSES 2006 INDIVIDUAL FACTORS	FINLAND	SPAIN	FRANCE	ROMANIA	POLAND
Male	0.00451*** (0.00106)	0.00275* (0.00140)	-0.0120** (0.00399)	-0.0114*** (0.00251)	-0.00655*** (0.000668)
Lwsecondeduc		0.0151*** (0.00166)	0.0581*** (0.00871)	0.00182 (0.0126)	-0.00191 (0.00108)
upsecondeduc1	-0.00740*** (0.00131)	0.0235*** (0.00193)	0.0569*** (0.00775)	0.0384** (0.0125)	0.00194 (0.00119)
Shtcycletereduc	-0.00785*** (0.00176)	0.0311*** (0.00230)	0.0786*** (0.00903)	0.0400** (0.0132)	0.0127*** (0.00180)
Bachemasteduc	-0.0145*** (0.00177)	0.0250*** (0.00240)	0.0676*** (0.00911)	0.0479** (0.0149)	0.0200*** (0.00195)
Doctoraleduc	-0.0695*** (0.00576)	-0.0662*** (0.0134)	0.00785 (0.0170)	0.0768*** (0.0138)	0.0254*** (0.00174)
age3039	0.160*** (0.00799)	0.00726 (0.00498)	0.0844** (0.0327)	0.0105 (0.0127)	0.0402*** (0.00264)
age4049	0.149*** (0.00802)	0.00326 (0.00505)	0.0586 (0.0328)	0.00966 (0.0128)	0.0425*** (0.00264)
age5059	0.153*** (0.00808)	-0.00327 (0.00524)	0.0315 (0.0330)	0.0154 (0.0129)	0.0493*** (0.00269)
age60more	0.185*** (0.00818)	-0.00689 (0.00607)	0.0151 (0.0350)	-0.0443** (0.0151)	0.0490*** (0.00312)
Seniority	0.0207*** (0.000152)	0.00420*** (0.000228)	0.00622*** (0.000612)	0.0159*** (0.000432)	0.00387*** (0.000122)
seniority2	-0.000497*** (0.00000429)	-	-0.000107*** (0.0000175)	-	-0.000113*** (0.00000359)
skillagricultfishery1	0.0238*** (0.00551)	0.0000680	0.0229 (0.225)	-0.0721** (0.0249)	0.0754*** (0.0203)
WORKPLACE FACTORS					
Partialtimewd	-0.0325*** (0.00166)	-0.0613*** (0.00214)	-0.0591*** (0.00541)	-0.111*** (0.00885)	-0.00617*** (0.000810)

Temporaryc	-0.0853*** (0.00190)	-0.0238*** (0.00160)	-0.184*** (0.00832)	-0.161*** (0.00762)	-0.0261*** (0.000725)
ESTABLISHMENT FACTORS					
Manufacture of office machinery, computers	0.000168 (0.00840)	-0.00801 (0.00553)	0.0843*** (0.0188)	0.0950*** (0.0106)	0.0889*** (0.00966)
Supporting and auxiliary transport activities	-0.00122 (0.00836)	-0.0265*** (0.00559)	0.110*** (0.0199)	0.0435*** (0.0113)	-0.00881 (0.00525)
Manufacture of food, products, beverages and tobacco	-0.00168 (0.00842)	-0.0541*** (0.00517)	0.142*** (0.0185)	-0.131*** (0.00957)	-0.0137* (0.00537)
Manufacture of coke, refined petroleum	-0.0981*** (0.0100)	-0.00986* (0.00490)	0.197*** (0.0178)	0.0358*** (0.0107)	0.0245*** (0.00561)
Manufacture of transport equipment	-0.0107 (0.00910)	-0.00878 (0.00536)	0.0708*** (0.0183)	0.0427*** (0.0109)	0.0130* (0.00579)
Public administration and defence	-0.0495*** (0.00849)		0.236*** (0.0174)	-0.0355** (0.0108)	0.425*** (0.00683)
size50249	0.0153*** (0.00201)	0.0181*** (0.00158)	0.210*** (0.00556)	0.130*** (0.00267)	-0.0864*** (0.00159)
size250m	0.0336*** (0.00186)	0.0249*** (0.00158)	0.311*** (0.00504)	0.284*** (0.00285)	-0.171*** (0.00190)
privatectl	0.0139*** (0.00138)	0.0151*** (0.00302)	-0.0769*** (0.0108)	-0.368*** (0.00400)	-0.225*** (0.00199)
industryca				0.0483*** (0.00599)	
indindustregca		0.0205*** (0.00137)	0.0303*** (0.00632)	0.0741*** (0.0131)	
enterpriseca	-0.0151** (0.00502)	0.0232*** (0.00183)	-0.0613*** (0.0142)	-0.0209*** (0.00366)	-0.0165*** (0.00170)
localunitca		0.0375*** (0.00415)			
N	308153	235241	113641	259140	652660
Pseudo R-Squared	0.26	0.068	0.24	0.21	0.65
Percent correctly predicted	88.53%	90.43%	75.17%	74.01%	92.99%
Standard errors in parentheses					
* p < 0.05, ** p < 0.01, *** p < 0.001					

Table 50.3 (Complete information 30.3) Annual Bonuses 2010 (marginal effects)

MARGINAL EFFECTS ANNUAL BONUSES 2010	FINLAND	SPAIN	FRANCE	ROMANIA	POLAND
INDIVIDUAL FACTORS					
Male	0.00183 (0.00101)	0.0104*** (0.00221)	-0.0145*** (0.00227)	-0.0143*** (0.00240)	-0.00954*** (0.00157)
upsecondeduc1	0.0356*** (0.00160)	0.0124*** (0.00336)	0.0207*** (0.00418)	0.0539*** (0.0161)	-0.000763 (0.00279)
shtcycletereduc	0.0368*** (0.00202)	0.0258*** (0.00409)	0.0342*** (0.00493)	0.0576*** (0.0172)	0.0130*** (0.00388)
bachemasteduc	0.0347*** (0.00193)	0.0294*** (0.00409)	0.0307*** (0.00497)	0.122*** (0.0168)	0.0260*** (0.00347)
age2029	0.101*** (0.00728)	-0.00832 (0.0152)	0.00846 (0.0233)	0.00179 (0.0244)	-0.0179 (0.0127)
age3039	0.123*** (0.00736)	0.00547 (0.0152)	0.0213 (0.0234)	-0.00714 (0.0243)	-0.0221 (0.0127)
age4049	0.113***	0.00322	0.0175	-0.00942	-0.0311*

age5059	(0.00739) 0.118***	(0.0153) 0.000154	(0.0234) 0.00265	(0.0244) -0.00872	(0.0128) -0.0316*
age60more	(0.00742) 0.138***	(0.0154) 0.00373	(0.0234) 0.00588	(0.0244) -0.0276	(0.0128) -0.0692***
seniority	(0.00750) 0.0184***	(0.0159) 0.0113***	(0.0238) 0.00432***	(0.0252) 0.0134***	(0.0134) 0.0101***
seniority2	(0.000144) -0.000432***	(0.000344) -	(0.000361) -0.0000414***	(0.000418) -0.000308***	(0.000242) -0.000253***
corporatmanagprof1	(0.00000394) 0.121***	(0.0000991) 0.0983***	(0.0000103) 0.0234*	(0.0000137) 0.0933***	(0.00000694) 0.0708***
managsmentprof	(0.0147) 0.0643***	(0.0223) 0.106***	(0.0108) 0.0585***	(0.00849) 0.0268**	(0.00621) 0.0952***
teachingprof1	(0.0150) 0.217***	(0.0224) 0.00604	(0.0116) -0.103***	(0.00972) 0.0963***	(0.00619) 0.191***
businessadminprof	(0.0132) 0.241***	(0.0229) 0.0913***	(0.0128) 0.00301	(0.0231) 0.241***	(0.00589) 0.0579***
sciencenginaprofl	(0.0131) 0.218***	(0.0216) 0.0658**	(0.0115) 0.0167	(0.0212) 0.156***	(0.00560) 0.0875***
businessadaprof	(0.0132) 0.249***	(0.0216) 0.0608**	(0.0109) 0.0212	(0.0208) 0.180***	(0.00601) 0.0511***
Metalmachinery	(0.0131) 0.257***	(0.0214) 0.0800***	(0.0109) -0.0412**	(0.0212) 0.124***	(0.00576) 0.0676***
Stationaryplant	(0.0133) 0.258***	(0.0219) 0.0740***	(0.0128) 0.0486***	(0.0217) 0.193***	(0.00587) 0.105***
	(0.0133) -	(0.0219) -	(0.0125) -	(0.0218) -	(0.00584) -
WORKPLACE FACTORS					
Partialtimewd	-0.0158***	-0.0926***	-0.0606***	-0.141***	-0.0612***
Temporaryc	(0.00138) -0.101***	(0.00295) -0.0522***	(0.00282) -0.153***	(0.00646) -0.0861***	(0.00282) -0.0262***
Yesupervisory	(0.00204) -	(0.00263) -0.00867**	(0.00451) -0.00410	(0.00720) 0.0859***	(0.00171) (0.0213)
ESTABLISHMENT FACTORS					
Manufacture of coke and refined petroleum	-0.00798 (0.00441)	0.0586*** (0.00649)	0.0129 (0.00785)	0.167*** (0.00856)	0.129*** (0.00501)
Manufacture of basis pharmaceutical products	0.00476 (0.00812)	0.106*** (0.00754)	-0.0159 (0.0124)	0.0891*** (0.0153)	0.0463*** (0.0139)
Manufacture of other non-metallic mineral products	-0.0313*** (0.00693)	0.0490*** (0.00837)	0.0286** (0.0106)	0.0847*** (0.00982)	0.211*** (0.00609)
Manufacture of basic metals	-0.00442 (0.00427)	0.0313*** (0.00707)	-0.0186 (0.00953)	0.202*** (0.00836)	0.123*** (0.00488)
Electricity, gas, steam and air conditioning supply	0.0128** (0.00432)	0.0180* (0.00841)	0.127*** (0.00647)	0.171*** (0.00873)	0.283*** (0.00503)
Mining and quarrying	-0.0212 (0.0116)	0.0000207 (0.0102)	0.0406*** (0.0122)	0.183*** (0.0104)	0.447*** (0.00439)
Public administration and defence	-0.0205*** (0.00373)	-0.179*** (0.00871)	0.0708*** (0.00668)	0.204*** (0.00734)	0.503*** (0.00383)
size50249	-0.00327* (0.00162)	0.0981*** (0.00319)	0.249*** (0.00407)	0.148*** (0.00243)	0.100*** (0.00183)
size250m	-0.000839 (0.00144)	0.108*** (0.00303)	0.334*** (0.00389)	0.286*** (0.00267)	0.101*** (0.00185)
Privatectrl	0.00960*** (0.00120)	-0.0986*** (0.00310)	0.0347*** (0.00358)	-0.303*** (0.00382)	-0.189*** (0.00207)
Indindustregca		0.0290*** (0.00249)	0.748*** (0.00706)	-0.0695*** (0.0108)	
Enterpriseca	0.0270***	0.0215***	0.799***	-0.0712***	0.0347***

Localunitca	(0.00331)	(0.00285) 0.0368*** (0.00534)	(0.00767)	(0.00288)	(0.00323)
N	315802	216769	220369	278270	681756
Pseudo R-Squared	0.26	0.096	0.24	0.19	0.24
Percent correctly predicted	89.10%	77.24%	80.07%	72.78%	72.19%

Standard errors in parentheses
* p < 0.05, ** p < 0.01, *** p < 0.001

C. Chapter 4

COEFFICIENTS REGRESSION	FINLAND	SPAIN	PORTUGAL	FRANCE	ROMANIA	POLAND
ANNUAL BONUSES 2002						
lnhlybonuses	0.242*** (0.00233)	0.336*** (0.00183)	0.637*** (0.00267)	0.229*** (0.00199)	0.224*** (0.00259)	0.452*** (0.00274)
INDIVIDUAL FACTORS						
male	0.125*** (0.00191)	0.115*** (0.00149)	0.0431*** (0.00164)	0.106*** (0.00257)	0.0698*** (0.00478)	0.0236*** (0.00166)
lwsecondeduc	0.0423 (0.0266)	0.00378* (0.00151)	0.0588*** (0.00214)	0.0445*** (0.00469)	0.0404* (0.0167)	0.0132*** (0.00250)
upsecondeduc1	0.0311*** (0.00195)	0.128*** (0.0374)	0.0906*** (0.00244)	0.0802*** (0.00308)	0.0924*** (0.0163)	0.0574*** (0.00307)
upsecondeduc2		0.0502*** (0.00241)				
upsecondeduc3		0.0310*** (0.00235)				
pstecondntereduc	0.0714*** (0.0141)	0.130* (0.0511)			0.161*** (0.0193)	0.0391*** (0.00379)
shtcycletereduc	0.0550*** (0.00255)	0.0533*** (0.00235)	0.194*** (0.00539)	0.155*** (0.00419)	0.331*** (0.0275)	
bachemasteduc	0.140*** (0.00325)	0.103*** (0.00304)	0.243*** (0.00460)	0.269*** (0.00496)	0.444*** (0.0222)	0.160*** (0.00443)
doctoraleduc	0.248*** (0.0136)	0.116*** (0.0134)		0.358*** (0.0115)	0.636*** (0.0451)	0.211*** (0.00396)
age2029	-0.0744*** (0.0121)	0.0191*** (0.00480)	-0.00667 (0.00598)	0.169*** (0.0188)	0.0970*** (0.0158)	0 (.)
age3039	-0.0434*** (0.0120)	0.0707*** (0.00487)	0.0327*** (0.00610)	0.264*** (0.0189)	0.182*** (0.0159)	0.0653*** (0.00270)
age4049	-0.0183 (0.0121)	0.101*** (0.00498)	0.0559*** (0.00625)	0.340*** (0.0191)	0.239*** (0.0162)	0.0747*** (0.00289)
age5059	-0.0286* (0.0121)	0.119*** (0.00515)	0.0622*** (0.00648)	0.388*** (0.0192)	0.266*** (0.0175)	0.0776*** (0.00308)

age60more	-0.0728*** (0.0131)	0.125*** (0.00645)	0.0488*** (0.00797)	0.495*** (0.0227)	0.303*** (0.0315)	0.100*** (0.00572)
seniority	-0.00539*** (0.000266)	0.0107*** (0.000240)	-0.00238*** (0.000317)	0.00160*** (0.000409)	0.00826*** (0.000784)	-0.00191*** (0.000252)
seniority2	0.000148*** (0.00000722)	- 0.000154*** (0.00000695)	0.000110*** (0.00000886)	-0.00000915 (0.0000113)	-0.000232*** (0.0000292)	0.0000872*** (0.00000769)
WORKPLACE FACTORS						
corporatmanagprof1	-0.0974 (0.0871)	-0.507 (0.388)		0.146 (0.149)	0.0518 (0.0373)	-0.261*** (0.00904)
managsmentprof	-0.101 (0.112)			0.0839 (0.150)	-0.0153 (0.0540)	-0.299*** (0.0186)
engineerscienprof1	-0.275** (0.0870)	-0.655 (0.388)		0.0808 (0.149)	-0.194*** (0.0476)	-0.493*** (0.0100)
lifescienhealthprof1	-0.192* (0.0927)	-0.583 (0.388)		0.130 (0.150)	-0.153** (0.0485)	-0.534*** (0.0112)
teachingprof1	-0.235** (0.0900)	-0.541 (0.388)		0.212 (0.191)	-0.401*** (0.0547)	-0.102*** (0.00869)
otherprofess1	-0.217* (0.0871)	-0.669 (0.388)		0.0318 (0.150)	-0.229*** (0.0470)	-0.318*** (0.00916)
physicalenginasprof1	-0.388*** (0.0870)	-0.774* (0.388)		-0.235 (0.149)	-0.210*** (0.0475)	-0.470*** (0.00972)
lifesciencehealasprof1	-0.404*** (0.0875)	-0.883* (0.388)		-0.244 (0.151)	-0.153** (0.0498)	-0.553*** (0.00975)
teachingasprof1		-0.896* (0.389)		-0.137 (0.154)	-0.280*** (0.0591)	-0.299*** (0.0116)
otherasprof1	-0.383*** (0.0870)	-0.786* (0.388)		-0.214 (0.149)	-0.226*** (0.0486)	-0.438*** (0.00890)
offclerks1	-0.525*** (0.0871)	-0.912* (0.388)		-0.326* (0.149)	-0.267*** (0.0482)	-0.510*** (0.00906)
customservclerks1	-0.492*** (0.0871)	-0.902* (0.388)		-0.329* (0.149)	-0.314*** (0.0499)	-0.555*** (0.0108)
personalservwork1	-0.463*** (0.0873)	-0.931* (0.388)		-0.291 (0.149)	-0.448*** (0.0489)	-0.604*** (0.00965)
modelsalespersons1	-0.515*** (0.0871)	-0.929* (0.388)		-0.328* (0.149)	-0.482*** (0.0507)	-0.573*** (0.0253)
skillagricultfishery1	-0.157 (0.171)	-0.983* (0.388)		-0.334* (0.161)	-0.444*** (0.0512)	-0.631*** (0.0214)
extractionbuiwork1	-0.464*** (0.0871)	-0.902* (0.388)		-0.315* (0.149)	-0.366*** (0.0491)	-0.583*** (0.0109)
metalmachinerywork1	-0.508*** (0.0871)	-0.862* (0.388)		-0.335* (0.149)	-0.346*** (0.0488)	-0.520*** (0.0105)
precisionhadicraftwork1	-0.529***	-0.926*		-0.331*	-0.435***	-0.368***

	(0.0873)	(0.388)		(0.151)	(0.0529)	(0.0234)
othercrafteradework1	-0.501***	-0.936*		-0.390**	-0.467***	-0.629***
	(0.0872)	(0.388)		(0.149)	(0.0490)	(0.0185)
stationaryplantoper1	-0.419***	-0.880*		-0.373*	-0.377***	-0.494***
	(0.0871)	(0.388)		(0.149)	(0.0499)	(0.0129)
machineoper1	-0.524***	-0.928*		-0.344*	-0.452***	-0.497***
	(0.0871)	(0.388)		(0.149)	(0.0489)	(0.0143)
driversoper1	-0.512***	-0.905*		-0.388**	-0.349***	-0.496***
	(0.0871)	(0.388)		(0.149)	(0.0489)	(0.0104)
saleservicesoccup1	-0.590***	-0.993*		-0.399**	-0.510***	-0.688***
	(0.0872)	(0.388)		(0.149)	(0.0486)	(0.00966)
agriculturalfishlab1	-0.607***	-1.066**			-0.544***	-0.704***
	(0.103)	(0.389)			(0.0546)	(0.0185)
miningconstlab1	-0.526***	-0.981*		-0.405**	-0.560***	-0.661***
	(0.0871)	(0.388)		(0.149)	(0.0491)	(0.0130)
partialtimewd	0.197***	-0.00151	0.201***	0.0789***	-0.00228	
	(0.00460)	(0.00252)	(0.00739)	(0.00420)	(0.0211)	
temporaryc	-0.0205***	-0.0179***	0.00488	0.0525***	-0.0978***	
	(0.00428)	(0.00168)	(0.00252)	(0.00856)	(0.0148)	
apprenticec	0.0243	-0.273***	-0.00295	-0.411***		
	(0.0137)	(0.00731)	(0.00387)	(0.0125)		
othersc	-0.0132			0.00687		
	(0.0633)			(0.0123)		
yesupervisory		0.0904***	0.0570***		0.212***	
		(0.00147)	(0.00338)		(0.0315)	
ESTABLISHMENT FACTORS						
Manufacture of wearing apparel, leather	-0.0627***	-0.00697	-0.00896*	0.0194	0.0451***	0.236***
	(0.00935)	(0.00531)	(0.00350)	(0.0195)	(0.0105)	(0.0493)
Manufacture of wood, pulp paper	0.0656***	0.0634***	0.0721***	0.0302*	0.0464*	
	(0.00801)	(0.00540)	(0.00464)	(0.0137)	(0.0189)	
Publishing, printing	0.137***	0.151***	0.0820***	0.0331*	0.430***	0.250***
	(0.00873)	(0.00625)	(0.00705)	(0.0141)	(0.0272)	(0.0389)
Manufacture of office machinery, computers	0.0159*	0.0765***	0.0967***	0.0439***	0.0975***	0.0266
	(0.00797)	(0.00552)	(0.00419)	(0.0127)	(0.0142)	(0.0391)
Manufacture of medical, precision instruments	0.0350***	0.122***	0.0699***	0.0644***	0.0174	0.392***
	(0.00926)	(0.0102)	(0.00444)	(0.0146)	(0.0292)	(0.0421)
Sale, maintenance and repair of motor vehicle	0.106***	0.0549***	-0.0191***	-0.0100	0.173***	0.161***
	(0.00818)	(0.00552)	(0.00578)	(0.0122)	(0.0171)	(0.0395)
Retail trade	0.0478***	-0.0246***	0.158***	-0.125***	0.114***	0.385***
	(0.00871)	(0.00581)	(0.00527)	(0.0124)	(0.0185)	(0.0432)

Land transport, air transport	0.153***	0.134***	0.216***	0.0314*	0.112***	0.344***
	(0.00864)	(0.00616)	(0.00612)	(0.0128)	(0.0214)	(0.0376)
Supporting and auxiliary transport activities	0.0497***	0.0950***	0.121***	-0.0187	0.324***	0.254***
	(0.00832)	(0.00632)	(0.00644)	(0.0134)	(0.0225)	(0.0372)
Real estate activities	0.107***	0.0672***	0.142***	0.0147	0.102***	0.191***
	(0.00882)	(0.00768)	(0.00660)	(0.0123)	(0.0181)	(0.0375)
Other business activities	0.0232**	0.0410***	0.156***	0.0524***	0.109***	0.133***
	(0.00871)	(0.00535)	(0.00602)	(0.0121)	(0.0165)	(0.0375)
Sewage, refuse disposal	0.0559***	0.160***	0.0862***	-0.0000617	0.130***	0.264***
	(0.0138)	(0.00803)	(0.00503)	(0.0164)	(0.0218)	(0.0380)
Activities of membership organizations nec	0.127***	0.0309***	0.0928***	-0.0316*	0.237***	0.189***
	(0.00811)	(0.00800)	(0.00494)	(0.0127)	(0.0291)	(0.0380)
Recreational, cultural and sporting activities	0.0831***	0.0847***	0.0579***	0.0597***	0.0469**	0.747***
	(0.00821)	(0.00627)	(0.00581)	(0.0126)	(0.0179)	(0.0378)
Mining and quarrying	0.0664***	0.267***	0.0685***	-0.00405	0.119***	0.387***
	(0.00868)	(0.00767)	(0.00423)	(0.0144)	(0.0242)	(0.0396)
Manufacture of food, products, beverages and tobacco	0.0508***	0.0505***	0.0681***	0.00912	0.206***	0.487***
	(0.00811)	(0.00516)	(0.00475)	(0.0125)	(0.0151)	(0.0381)
Manufacture of coke, refined petroleum	0.0336***	0.119***	0.105***	-0.00747	0.171***	0.346***
	(0.00796)	(0.00499)	(0.00444)	(0.0127)	(0.0158)	(0.0450)
Manufacture of other non-metallic mineral products	0.00242	0.126***	0.0653***	0.0130	0.171***	
	(0.00848)	(0.00536)	(0.00576)	(0.0129)	(0.0189)	
Manufacture of basic metals and fabricated metal products	-0.0619***	0.118***	0.0901***	-0.0170	0.103***	0.213**
	(0.00934)	(0.00521)	(0.00580)	(0.0144)	(0.0169)	(0.0680)
Manufacture of machinery and equipment nec	0.0941***	0.124***	-0.0123*	-0.0241	0.0885***	1.019***
	(0.00938)	(0.00557)	(0.00536)	(0.0127)	(0.0157)	(0.0424)
Manufacture of transport equipment	0.0635***	0.117***	0.0623***	-0.00809	0.149***	0.0929*
	(0.00826)	(0.00537)	(0.00589)	(0.0127)	(0.0173)	(0.0398)
Manufacturing nec	0.0905***	0.0272***		-0.0179	0.0707***	0.469***
	(0.0115)	(0.00530)		(0.0153)	(0.0147)	(0.0480)
Electricity, gas and water supply	0.160***	0.193***		-0.0202	0.189***	0.423***
	(0.00864)	(0.00630)		(0.0125)	(0.0164)	(0.0380)
Construction		0.123***			0.109***	0.369***
		(0.00536)			(0.0135)	(0.0392)
Hotels and restaurants		0.0722***			0.239***	0.0869*
		(0.00565)			(0.0223)	(0.0376)
Financial intermediation		0.107***			0.486***	0.377***

		(0.00574)			(0.0185)	(0.0376)
Public administration and defence		0.0898***			0.0671***	0.160***
		(0.00633)			(0.0142)	(0.0374)
Education		0.0961***			-0.00884	0.124***
		(0.00588)			(0.0163)	(0.0374)
Health and social work					0.0942***	0.102**
					(0.0151)	(0.0374)
size50249	0.0341***	0.0764***	0.0156***	0.00189	0.0895***	0.00633***
	(0.00279)	(0.00157)	(0.00209)	(0.00319)	(0.00669)	(0.00118)
size250m	0.0505***	0.138***	0.0395***	-0.00113	0.140***	0.0965***
	(0.00266)	(0.00176)	(0.00238)	(0.00308)	(0.00682)	(0.00230)
sizeall		0.0183***				
		(0.00310)				
privatectrl	-0.0243***	-0.0724***	0.00000743	-0.0434***	0.114***	0.0300***
	(0.00272)	(0.00266)	(0.00350)	(0.00401)	(0.00673)	(0.00508)
publprivctrl	0.00632	-0.0759***				
	(0.00459)	(0.00721)				
nationalmarket		0.0365***	0.00989***		0.0666***	
		(0.00148)	(0.00218)		(0.00592)	
eumarket		0.0600***	0.0221***		0.0782***	
		(0.00244)	(0.00296)		(0.00797)	
worldmarket		0.0772***	0.0313***		0.136***	
		(0.00239)	(0.00300)		(0.00932)	
industryca	-0.246***		-0.00928*		-0.0282***	
	(0.0183)		(0.00377)		(0.00850)	
indindustregca	0.0633***	0.0123***	-0.0173***		-0.138***	
	(0.00707)	(0.00149)	(0.00428)		(0.0140)	
enterpriseca		0.0419***	0.0441***		-0.0563***	
		(0.00197)	(0.00435)		(0.00638)	
localunitca		0.0130***				
		(0.00350)				
othertca		0.00987**	-0.0317***			
		(0.00358)	(0.00332)			
nocaexists			-0.00307	-0.0184***	-0.0428**	
			(0.00541)	(0.00466)	(0.0153)	
_cons	2.961***	2.514***	1.689***	2.417***	8.169***	2.706***
	(0.0882)	(0.388)	(0.00872)	(0.151)	(0.0579)	(0.0386)
N	120603	215362	62587	103691	39726	147205
R2	0.568	0.750	0.906	0.715	0.661	0.839

“...i ballarem, ballarem, ballarem”

Joan Serra (coreògraf)