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**Variable Pay Systems in Spanish automotive industry: wage flexibility and  
strategies of multinational corporations to improve their competitiveness**

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**Abstract**

The main aim of this paper is to find out 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. This connection also could be found in small and medium domestic firms, but in transnational companies seems to be much more obvious.

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

These new forms of compensation have been introduced in most important companies of Spanish automotive industry. The multinational or transnational 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 over the industrial relations of these companies claiming high levels of flexibility: numerical, functional and wage flexibility. So, there would be a connection between the introduction of these new forms of pay and wage flexibility and the followed strategy by Spanish automotive transnational corporations.

Firstly, this paper analyzes the impact of Variable Pay Systems on the 9 companies currently in Spanish automotive industry which accounted the 99,9% of the total produced vehicles and the 99,4% of employed people<sup>1</sup>.

On a methodological level, has been used a case study. Data, on the one hand, have been obtained from questionnaires and interviews with unions, managers and experts in industrial relations and from legal texts. On the other hand, additional data have been achieved from SABI database. With all collected information, comparing the 9 different companies, a preliminary qualitative analysis has been done.

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<sup>1</sup> Data from the Spanish Ministry of Industry Tourism and Trade 2009

Secondly, the paper goes further in qualitative analysis, using techniques of Multi Value Qualitative Comparative Analysis (mvQCA) developed by Cronqvist (Cronqvist, 2003), which are a generalization of Qualitative Comparative Analysis (QCA) introduced by Ragin in 1987. So, we use mvQCA methods to identify the relevant aspects which determine the use of Variable Pay Systems in Spanish automotive industry.

As a conclusion, the paper argues that the main reason for the introduction of these new forms of compensation is not (only) increase workers motivation and belonging to the company, as some literature suggests, or not directly: this could be a consequence derived. In some cases, this introduction can improve productivity and quality levels, but in some cases only can increase competence among employees. Moreover, the introduction of Variable Pay Systems is not connected with current economic crisis, because in most analyzed companies introduction attempts had been begun some years before: but economic crisis has provided that these new compensation schemes have been accepted easily by social partners. So the introduction of Variable Pay Systems in Spanish automotive industry is related with the strategy of multinational corporations trying to improve their competitiveness in global market through reducing labor costs and through increasing levels of wage flexibility.<sup>2</sup> 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 Spanish economy.

**Keywords:** variable pay systems, wage flexibility, labor productivity, unit labor costs, competitiveness, multinational corporations, automotive industry.

**JEL Classification:** J30, J31, J33, J53

## 1. INTRODUCTION

One of the problems arising from the current economic crisis has been the controversial variable compensation of some employees of the U.S. banking industry that rewarded placement of called “subprime” mortgage among their customers. This fact can be found not only in U.S., but in other countries

Variable Pay is not a new concept in the field of wages. But, traditionally, has been linked with the compensation in some industries with commission sellers (for example, insurance industry) or with the compensation of top executives. However, in recent years, as a result of the implementation of changes in patterns of collective bargaining and wage determination we can look a generalization of

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<sup>2</sup> One possible measure of competitiveness at firm level is unit labor costs and the two determinants elements are labor costs and level of productivity

Variable Pay Systems in different productive industries and their extension to the entire workforce of the companies.

New forms of Variable Pay Systems schemes and the changes in determination of wages are seeking to link wages to company results. Their purpose is to become more competitive and flexible in international markets, especially in the current context of economic crisis.

In this paper, we review Variable Pay Systems from an empirical point of view, through a case study of 9 companies in Spanish automotive industry.

## **2. BACKGROUND**

### **2.1 Wage determination**

If we want to analyze the factors that affect wage determination or wage adjustments at plant level by employers, we can classified main variables in 2 groups, according to Blanchflower and Oswald (1988): factors external to the plant and factors internal to the plant. (Martínez-de-Morentin, S., Bayo-Moriones, A., Galdon-Sanchez, J.E., 2012).

So, we would find as external factors:

- Cost of living
- Comparability with other firms wages
- Fulfillment of Collective Agreements at sector level

And, as internal factors:

- The need to recruit and retain employees
- The climate of industrial relations
- The performance of the company

We are going to focus in last internal factor. Sometimes, linking pay with performance may be part of the compensation policy to increase motivation and effort of the employees (Martínez-de-Morentin, S., Bayo-Moriones, A., Galdon-Sanchez, J.E., 2012). But moreover, this remuneration scheme could be a way to reduce Labor Cost in order to reduce Unit Labor Costs.

### **2.2 Definition of Variable Pay Systems**

In a first approach to Variable Pay Systems (VPS), they appear as 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 were the “Old Forms of Variable Pay Systems”. One novelty consists in seeing how have emerged “New Forms of Variable Pay Systems” such as the Financial Participation of Employees in Companies, that did not exist before. And other novelty is “New Forms of Variable Pay Systems”, which are similar to the “Old Forms of Variable Pay Systems”, but becoming non-consolidated pay<sup>3</sup> in Collective Agreements.

“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 in 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. (Objective evaluation).

2) Performance-Related Pay (PRP) or payment by qualitative performance.- There is a relationship between payment and achievement certain objectives<sup>4</sup>. (Subjective evaluation)

3) Financial Participation Schemes (FPS).- Here we find, on one hand, “Profit-Sharing Schemes”, where workers get a percentage of the company’s profits. They remain as a popular way of motivating employees to increase their involvement in, and encourage closer identification with employers. These schemes are also seen as a way of retaining staff.

And, on the other hand, we find “Share-Ownership Schemes”, where a part of the payment adopt the form of company’s shares. (Suff P. and Reilly P., 2004).

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<sup>3</sup> Non consolidated payment refers to those one off payments made to employees. Such payments do not form as part of one’s salary or their full pay package. Moreover, such awards do not contribute towards one’s pension upon retirement.

<sup>4</sup> 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 influence<sup>4</sup>. (Suff P. and Reilly P., 2004).

“Payment by Results”, being consolidated pay, would be part of “Old Forms of Variable Pay Systems”. While “Payment by Results”, “Performance-Related Pay” and “Financial Participation Schemes”, being non-consolidated pay, 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. If PRP is related to *Collective Qualitative* Objectives, it will be called *Collective PRP*. If PRP can be connected with *Individual Qualitative* Objectives, it will be called *Individual PRP*.

So, other relevant classification of VPS is between *Collective VPS* and *Individual VPS*.

All these classifications will be very useful to analyze data from case study.

### **2.3 Reasons for introduction of Variable Pay Systems**

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

-Ortodox Economics approach

In free market situation, without institutions or regulations, like trade unions, wages reflect the different productive capacities of workers, quoting Minford (1985) (Arrowsmith et al., 2007). So, according to Marsden et al. (1999), pay systems would be configured by incentives which link effort and performance to reward employees, creating a virtuous circle. (Arrowsmith et al., 2007).

-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 role through process of decentralization and individualization of collective bargaining, (Arrowsmith et al. 2007). But, according to other authors, like Pendleton (1997), Variable Pay Systems are viewed more as a means of reinforcing communication and financial participation rather reinforcing individualization. (Arrowsmith et al. 2007).

-Human Resource Management approach

From this point of view, Variable Pay Systems are a strategic response to international competition, deregulation and weakening institutions of collective bargaining, quoting Lawler (1995) (Arrowsmith et al. 2007).

## **2.4 Variable Pay Systems and wage flexibility**

The concept of labor market flexibility relates to the ability to adapt to, and respond to, changing economic conditions, quoting Klau and Mittelstadt 1986, Blau and Kahn 2002, Rubery and Grimshaw 2003 (Black et al., 2008). In first formulations, Atkinson (1984) developed a model with three main forms of flexibility at company level ( Black et al., 2008):

-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 flexicurity. The four forms of flexibility which were quoted were:

-External numerical flexibility (hiring and firing)

-Internal numerical flexibility (number 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).

## **2.5 Characteristics of the Spanish Automotive Industry**

Following NACE classification, 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

We must mention the creation of clusters between vehicle manufacturer companies (291) and component manufacturer companies (292 and 293).

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 accounts for 21.4% of manufacturing exports. It has the second position in production industry, the third position in volume of employment and the fourth position in value added. It occupies an upper-middle position in compensation per employee, productivity per employee and unit labor costs. (Ministerio de Industria, Energía y Turismo, 2012).

In the Spanish Automotive Industry, the volume of exports in relation to their production is significantly higher than the average manufacturing (61.1 vs. 29.6%). This industry has remarkable drag effects on other manufacturing sectors (like steel industry, textile, electronics, etc). It is the manufacturing industry with more output per employee (251,7 thousands of €) and with less energy intensity than the whole manufacturing (1,4% vs. 3,3%). And is one of the manufacturing sectors with higher spending dedicated to R & D (5.1%).

In this paper, we will focus in 291 subsector, which is manufacture of motor vehicles. Main characteristics of this subsector would be (Ministerio de Industria, Energía y Turismo, 2010):

- Membership of large global groups (decision centers outside Spain)
- Competitive advantages of the Spanish plants:
  - \*High productivity
  - \*Specialization midrange vehicles and low
  - \*Workers: training and qualification
  - \*Access to wider EU market

But 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 evident. Moreover, only between 2008 and 2010, the crisis has meant the loss of 9.221 direct jobs, going to have from 67,264 people working in 2008 to 58,043 people working in 2010 (Anfac, Servicio Público de Empleo Estatal, 2011).

### **3. DATA AND METHODOLOGICAL ASPECTS**

#### **3.1 Justification of the methodology used: a case study**

On a methodological level, we use a case study analyzing 9 (out of 10<sup>5</sup>) of the companies currently in Spanish automotive industry, which accounted the 99,9% of the total produced vehicles and the 99,4% of employed people<sup>6</sup>, in 2009.

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<sup>5</sup> Data for 2009. Since 2011 there are only 9 companies in the Spanish automotive industry, because Santana-Motor, S.A. closes its car factory this year. This company accounted the 0,1% of the total produced vehicles and the 0,6% of employed people.

To get the empirical information of this paper, have been used 3 sources of information:

- Interviews with unions, managers and experts in industrial relations, conducted between 2011 and 2012. Some interviews were face to face, but most of them were phone interviews.

- Legal texts<sup>7</sup> of Collective Agreements

- SABI database , which provides information for 1.200.000 Spanish firms and more than 400.000 Portuguese firms.

We decided to use a qualitative methodology rather than a quantitative methodology, because in Spain we only can get detailed information on the remuneration system of the companies through interviews and legal texts of Collective Agreements. On the one hand, we do not have national databases like WERS (Workplace Employment Relations Survey) in Britain<sup>8</sup>, published by British government, which collects data from a representative sample of 2.680 British workplaces. Or databases like Panel Study of Income Dynamics<sup>9</sup> 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 does not have European databases like ECS (European Company Survey)<sup>10</sup> published by Eurofound (European Foundation for the Improvement of Living and Working Conditions), which is a large-scale representative survey addressed to managers and employees representatives.

So, we decided to focus our research in Spain in a single industry, like the automotive industry, and do a case study.

If we have to do a definition of case study, quoting Ying (1989), we would say that “it would be a scientific inquiry that investigates a contemporary 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” (Villarreal and Landeta, 2010).

But, case study is frequently criticized. We will analyze what are some of the main criticisms of the case study. (Villarreal and Landeta, 2010).

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<sup>6</sup> Data from the Spanish Ministry of Industry Tourism and Trade 2009

<sup>7</sup> In the case of companies C7, C8 and C9 the information comes only from legal texts.

<sup>8</sup> 2011 WERS is the last one and it is sixth survey of employment relations in Britain. It collects data from 2.680 workplace managers, 1.002 worker representatives and 21.981 employees.

<sup>9</sup> The sample size of PSID in 2009 was of 70.000 individuals living in more than 9.000 families in the United States.

<sup>10</sup>Last ECS is ECS 2013 and it is conducted simultaneously in 32 countries, targeting 29,950 companies and establishments.



The first criticism is that the results are inconsistent (Arias, 2003) and biased (Bonache, 1999 and Arias, 2003) (Villarreal and Landeta, 2010). The researcher ceases to be objective: specifies the phenomenon to study, choose the theoretical framework and analyzes the causal relationship between the events.

The second criticism, according to Rialp (1998), is about concerns the generalization of results from a necessarily limited number of cases studied (Villarreal and Landeta, 2010). In reply to some authors propose 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 cases. Some authors, like Maxwell (1998), prefer to speak of "transferability" (generalization of a theoretical framework) instead of "generalization" (generalization of results) in qualitative research. (Villarreal and Landeta, 2010).

Despite all these criticisms, the case analysis and qualitative methodology can be useful when we want to study the phenomenon can not be understood independently of its context, when we have large number of variables to consider and we only have information of a limited number of cases. (Villarreal and Landeta, 2010). And this could be equally applicable in the case of compensation systems and in the case of the VPS in Spain.

The whole justification for the use of a case study methodology would not be necessary in the case of other social sciences, but yes it is in the case of Economics, in which qualitative studies in some areas do not have good press and are considered rather "unscientific". In our case, we believe that a qualitative methodology, if properly used, can be very useful, especially when there are problems at a number of cases insufficient to apply a quantitative methodology.

### **3.2 QCA and TOSMANA**

Qualitative Comparative Analysis (QCA) is a qualitative methodology to be used in researches in which the number of cases is rather small (Small-N cases) and in which the number of variables can exceeds the number of cases. It was introduced by Charles C. Ragin in 1987. It is based on an extension of Mill's method of controlled comparison and relies 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 fitting into a discrete scale of {0 (not true) ;1 (true)}. To try to solve this problem, in 2000 Ragin introduces Fuzzy-sets methodology (fs QCA) with which it is possible to transform data in an continuous scale from 0 (fully out) to 1 (fully in), using probabilistic criteria. (Cronqvist, 2003). The 3 qualitative breakpoints that structure a fuzzy set were 3 thresholds: {0,95;

0,5; 0,05} So, Fuzzy-sets allows the introduction of intermediate positions between 0.0 to 1.0. (Ragin, 2008).

Further, in 2003 Lasse Cronqvist developed the software called TOSMANA (Tool for Small-N Analysis) which introduce the Multi Value Qualitative Comparative Analysis (mvQCA). TOSMANA uses discrete multi-value scales, and instead of applying probabilistic method (like Fuzzy-sets QCA) it applies Boolean method. mvQCA would be a generalization of QCA<sup>11</sup> and, like QCA, its main goal is to find a minimal solution representing all cases with a concrete outcome. (Cronqvist, 2003). So, Tosmana introduces Multi-value minimization as an additional feature of Boolean minimization. (Cronqvist, 2007).

Some criticisms about QCA come from the different perspectives of scholars in front of this kind of methodology. Quantitatively-oriented authors focus their criticisms in topics like: robustness, probabilistic vs. deterministic assertions, etc. Qualitatively-oriented authors complain that it is another form of quantitative analysis: turning concepts into numbers, reducing cases to combinations of conditions, etc. (Schneider and Grofman, 2006).

But, despite of 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 these methods can be useful in some research in which quantitative methodologies are difficult to be applied.

## **4. MAIN RESULTS OF CASE STUDY**

### **4.1 Main results from preliminary qualitative analysis**

With the data obtained through interviews and legal texts of Collective Agreements, we have done a preliminary qualitative analysis comparing the 9 different companies.

We have summarized all the information from questionnaires used in the interviews and from legal texts in 12 sections and questions. The 2 first questions are about weight of each company within automotive industry and about their economic situation. Question 3 is about the possible precedents of Variable Pay Systems. Questions from 4 are about general features of last VPS introduced in each company. And questions from 5 to 8 are about specific characteristics of last VPS introduced. Finally, questions from 9 to 12 are more connected with analysis of reasons, from different points of view, for the introduction of VPS and its relationship with economic crisis.

We have divided the explanation of main results into different sections following the 12 questions:

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<sup>11</sup> While QCA only includes dichotomous variables to be processed, MvQCA also includes multivalued variables in the analysis. (Cronqvist, 2003).

*First*, all 9 companies are MCNs or TNCs, which belongs to worldwide groups, and this determines its economic strategy to follow and pressures its economic behavior. For example, marks the outlines of Collective Bargaining. In a worldwide group company benefits are shared only among staff from parent company, but not among all the staff all the group, which has contributed to get these benefits, too<sup>12</sup>.

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) (Bechter 2010). Companies have to response to this increased competition with a shift from less focused internally to more market-based pay, quoting Towers (2004), to enhance organisational flexibility and efficiency. And VPS provide this additional flexibility and efficiency (Bechter, 2010).

Moreover, the importance of each of the 9 companies is such that each has a Collective Agreement (CA) at company level.

4 companies had positive results in 2011 and the rest 5 companies others had negative results. However, it would be significant to analyze the results of the worldwide consolidated group..

*Second*, VPS were already introduced before last Collective Agreement in most companies before last Collective Agreement. So, we can find precedents of VPS in second last Collective Agreement, which began, in all companies, before the beginning of the current economic crisis, in early of 2008<sup>13</sup>.

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 out of the Collective Agreement is not new. We can observe, that only 2 companies (C5 and C8) of Spanish automotive industry have not introduced VPS yet: they only have VPS which only include staff out of the Collective Agreement.

We have to take into account that we talk about VPS always inside Collective Bargaining, because in Spain Variable Pay schemes are always covered by collective bargaining, obviously for the staff within Collective Bargaining. But in other countries or using others data base this could be different.<sup>14</sup>

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<sup>12</sup> Unions claim that percentage of profits were shared among all the employees, not only among parent company employees.

<sup>13</sup> One of its triggers was the subprime mortgage crisis in the summer of 2007 in USA

<sup>14</sup> For exemple, the authors Lemieux, MacLeod and Parent in his paper (2012), using PSID divide jobs on the basis of if they pay for performance and if they are covered by collective bargaining. This distinction it could not be done in the case of Spanish Automotive Industry.

*Third*, respect of characteristics of new implemented compensation systems, we can say that only 2 companies have modified the reference of wage increases: is no longer forecast Consumer Price Index but is real Consumer Price Index.

7 companies continue calculating wages increases from Consumer Price Index + points determined in Collective Bargaining. Only, 2 companies have unrelated wages increases from Collective Bargaining connecting with an Objective Bonus linked to Collective Objectives, in one case, and related to Expected Operative Results, in the other case. In first case, we are in front of a Collective PRP and, in the second case, we are in front of a PBR combined with Collective PRP.

Given this context of economical crisis, collective bargaining is more emphasis on safety over wage increases. Moreover, a new philosophy of wage increased has been introduced, which is not because of the economic crisis, directly: the crisis the only thing that has done is accelerate this process. Wage increases will go connected with aspects like results, competitiveness, etc.

The most of VPS introduced by all different companies are Collective VPS (in the 7 companies that have introduce VPS), like Collective PRP, linked to Collective targets. Most of them are non-consolidated pay and this is a very important point that we have to remark, because it indicates a real change to other variable components that may already exists variables

Companies which have introduce Individual VPS, apart from Collective VPS, are only 3. For example, we can find Individual PRP which are linked to Individual targets. And all of them are also non-consolidated pay.

*Fourth*, legal texts of Collective Agreement only offer general information of wage increases and VPS: for more details you have to use other complement legal texts, which can provide additional information. In most companies, VPS are added to total gross annual salary (total wage bill 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.

*Five*, from management point of view the reasons for introduction of VPS would focus in improving the competitiveness and flexibility<sup>15</sup> of the company and in motivation of employees.

These schemes of remuneration would reinforce the feeling of belonging to the company. It doesn't imply any additional cost of supervision, because individual evaluation has been done long time ago.

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<sup>15</sup> 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 unions<sup>16</sup> point of view, the reasons for introducing VPS would focus only in reduction of wage costs (although those are a little percentage in total production costs), not improving the motivation of employees and it didn't have been introduced due to economic crisis. These schemes don't help employees to feel company as own.

*Six*, 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 allocation of new model car are always in Collective Bargaining.

*Seven*, in opinion of some unions, to introduce higher levels of co-management would be necessary a corporate culture change and an economical system change.

With data from 9 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 Spanish automotive industry and the current economic crisis. However, due to crisis all these changes have been introduced in a more comfortable way because have been much easier acceptance.

#### **4.1 Main results of mvQCA**

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

As we have seen before, we would understand VPS as a compensation system that would affect the entire workforce of the company, not only top managers.

In this sense, as a dependent variable we have used a variable which includes the different kinds of VPS that it could be introduced. Taking into account if there are wages increases or not or if VPS are Collective or Individual.

We can distinguish between variables with data which comes from interviews and from legal texts (these would be descriptive statistic) and variables with data which comes from SABI database and which becoming the independent variables considered (that we had used to do Multi-value minimization).

In the last case of independent variables coming from SABI database, *first* we refer to *Economic Results* of each company in 2011 and its evolution compared to 2010. We have chosen this period

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<sup>16</sup>In Germany automotive industry, union remains 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 for the case of Spanish automotive industry.

of time because it is the latest data updated. But, also, because 2010 and 2011 are the date of starting the last Collective Agreement in most companies<sup>17</sup>.

Using TOSMANA software, we obtain that the companies which have introduced most advanced schemes of VPS, at level of changes in the determination of wages increases and Collective VPS or Collective plus Individual VPS, are those companies in which we can observe positive results in 2011 and their improvement from the situation in 2010<sup>18</sup>.

The second most advanced schemes of VPS, at level of no changes in the determination of wages increases but Collective VPS, are those companies in which we can observe positive results in 2011 but with deterioration from 2010.

Second, we refer to *Unit Labor Costs*, a measure of competitiveness at firm level, that is defined by the ratio between Labor Costs and Productivity. From SABI database, we have calculated Labor Costs dividing staff cost of each company among its number of employees. And we have calculated the level of Productivity dividing the value added of each company among its number of employees. And

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

In our results from TOSMANA software, we can explain that in the most of companies which have introduced most advanced schemes of VPS, we can observe a decreasing or a low increase in Unit Labor Costs, between 2010 and 2011<sup>19</sup>, like C1, C2, and C6. And, this fact, would imply an improvement of competitiveness level of companies.

The second most advanced schemes of VPS, are those companies in which we can observe also a decreasing in Unit Labor Costs, like C3<sup>20</sup>

The main reasons that explain this behavior of decreasing Unit Labor Costs are:

-Or higher increasing of productivity respect the increasing of Labor costs

-Or higher decreasing of Labor costs respect the decreasing of productivity

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<sup>17</sup> From the beginning of the crisis, in 2008, all the following years have been particularly hard for Spanish Automotive Industry.

<sup>18</sup> The exception would be C2 company with negative results but improving its situation

<sup>19</sup> The exception would be C4 company with a big increase of Unit Labor Costs, due to a very big decrease in its Added Value and in its Productivity level

<sup>20</sup> The exception would be C7 company with an increase of Unit Labor Costs, due to an important decrease in its Productivity level.

## 5. CONCLUSION AND DISCUSSION

As an indicator of competitiveness at company level, we use unit labor costs, which are defined as the ratio of Labor Costs, staff costs per worker, divided between labor productivity, measured by added value of the company per worker.

Compared to competitors, companies are concerned to maintain low unit labor costs, with the goal to keep their market power. They can do it through increasing productivity, which is not easy, or through decreasing nominal wages.

In the analysis of competitiveness at firm level we can see that Variable Pay Systems is very relevant because this kind of remuneration schemes seem to attempt to influence UCL: reducing total labor compensation ( $W_n$ ) and increasing labor productivity ( $Q/L$ ). So, would have to see which influence is stronger.

As we have explained above, in our case study of Spanish automotive industry, *from management point of view*, the reasons for introduction of VPS are focused in improving the competitiveness and flexibility of the company and in improving the motivation of employees.

In the current global crisis, automotive companies have to seek new wage revision formulas, which involving a paradigm shift. So, measures to avoid inflationary are introduced, linked to the achievement of goals in the companies, like VPS.

These schemes of remuneration would improve the predisposition of workers, because they perceive that something is playing if they do their job. So they are trying to influence the level of labor productivity.

But, as we have explained previously, in our case study of Spanish automotive industry, *from unions point of view*, the reasons for introduction VPS are focused in reduction of wage costs. The main purpose of VPS is to disconnect wage increases from CPI and to connect with other indicators, with the idea of reducing the level of wage increases. And another reason would be increasing the individuality and competence among employees<sup>21</sup>.

Only if VPS are well built, it can be an incentive and an element of motivation for a part of the staff. But, sometimes low performance is not the fault of an employee but the company structure, the organization of work and labor tasks.

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<sup>21</sup> 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)

The implementation of VPS not suppose any additional cost of supervision, in most analyzed companies and let employers reward in function of bad or good performance or in function of bad or good economic results of the company, for example. For all these reasons employers stop incurring additional fixed labor costs and reduce their wages costs. (Suff. P, and Reilly P., 2004). In recession times, when markets appear unstable, companies may be more willing to adapt to the new cycle through labor costs, through VPS, instead of using workforce reductions. (Calleja-Blanco, J. 2012). Although, in fact, 2 types of measurements are combined.

Summarizing, the introduction of VPS 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
- Introduction before last Collective Agreement: before the beginning of the crisis of 2008
- Addition to Gross Annual Salary. With a percentage of 2,4% on average
- Positive results in 2011 and improvement and deterioration from 2010.
- Low growth rates or decreasing rates of Unit Labor Costs: improvement of competitiveness level of companies

So, we can conclude that could have a relationship between the introduction of Variable Pay Systems and the strategies of multinational companies looking for higher levels of competitiveness. Because, in 4 companies (*C1, C2, C3 and C6*) from the 7 companies which have introduced Variable Pay Systems, we can observe this connection. In these 4 companies, we can find the introduction of VPS schemes (most advanced and second most advanced) and the decreasing or low increasing in Unit Labor Cost between or the years 2010 and 2011. Moreover, in all these 4 companies, Variable Pay Systems were introduced in second last Collective Agreement.

The reasons of the decreasing in ULC are connected with higher increasing of Productivity level (respect to increasing in Labor Cost) or with higher decreasing of Labor Costs (respect to decreasing in Productivity). So the introduction of VPS not always related with higher levels of Productivity: sometimes could be related with lower levels of Labor Costs, being, in the same way, connected with the decreasing in Unit Labor Cost and the improvement of competitiveness.

*Companies C4 and C7*, which also have introduced most advanced VPS, we can observe an important increase of Unit Labor Cost due to the most important decreasing in Productivity level of the



whole 9 companies. This situation it is explained by the impact of the current crisis and the important decrease in added value in both companies.

*Company C9* shows an increasing in Unit Labor Cost, but the introduction of VPS is not very important. And, *companies C5 and C8* don't have introduced any type of VPS different from variable compensations schemes of top managers.

We need go further in the research to find more evidence of the connection of the introduction of VPS and the decreasing in ULC and the improvement in competitiveness. But, in despite of this, we can say that the way how VPS could improve competitiveness is not always increasing motivation and Productivity level. In some cases, it could be achieved through reducing Labor Costs<sup>22</sup>.

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 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, 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 can not solve this problem with measures to reduce Labor Cost. This only let improve competitiveness in short run. So, we have to look for mechanisms to increase productivity. And, sometimes, VPS become only another way to looking for competitiveness through reducing Labor Cost. The Spanish Economy must evolve and must find alternatives strategies if it wants out of the current crisis.

## **6. FURTHER DEVELOPMENTS**

Would be very interesting to do a comparative study, comparing all the results about VPS obtained in Spanish Automotive Industry with the information from other countries, looking for similar methodologies to be used..

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## Appendix

### 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	0 Not belonging to a worldwide group and absence of a CA at company level 1 Belonging to a worldwide group and presence of a 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 pay 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 evolution compared to 2010	0 Negative results in 2011 + deterioration from 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
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ULC	Evolution of Unit Labor Costs between 2010 and 2011	<ul style="list-style-type: none"> <li>0 Increasing ULC: productivity is decreasing and labor costs are increasing</li> <li>1 Increasing ULC: productivity is decreasing and labor costs are decreasing</li> <li>2 Increasing ULC: productivity is increasing and labor costs are increasing</li> <li>3 Decreasing ULC: productivity is decreasing and labor costs are decreasing</li> <li>4 Decreasing ULC: productivity is increasing and labor costs are increasing</li> <li>5 Decreasing ULC: productivity is increasing and labor costs are decreasing</li> </ul>
PRODTY	Evolution of Productivity between 2010 and 2011	<ul style="list-style-type: none"> <li>0 Decreasing productivity</li> <li>1 Increasing productivity</li> </ul>
LCOST	Evolution of Labor Costs between 2010 and 2011	<ul style="list-style-type: none"> <li>0 Decreasing labor costs</li> <li>1 Increasing labor costs</li> </ul>
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	<ul style="list-style-type: none"> <li>0 No changes in wages increases + No VPS introduced</li> <li>1 No changes in wages increases + Col.+Individual VPS</li> <li>2 No changes in wages increases + Collective VPS</li> <li>3 Changes in wages increases + Collective VPS</li> <li>4 Changes in wages increases + Col.+Individual VPS</li> </ul>
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## 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