

Formal or Informal Institutions? The Mission of Flexible Labour Markets

Master Thesis



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Abstract

The most recent financial crisis showed the great diversity in the flexibility of labour markets across the OECD countries. In some countries, unemployment rates doubled, while the unemployment rates did not change in other countries. The OECD already recommended the increase of the flexibility of the labour market in their job studies in the year 1994, but after the most recent financial crisis, even more focus is put on increasing this flexibility. For example, the European Union advised its member states to increase the flexibility of their labour market last year (European Commission, 2018). But what determines this flexibility of the labour market? Are economic factors like formal institutions determining the flexibility of labour markets? Or should country-specific cultural characteristics, which can be measured by the four Hofstede (1984) dimensions, not be excluded from the analysis? Multiple regression analysis provides support for the latter explanation, as country-specific cultural characteristics play an important role in determining, for instance, the formal institutions of a country. The results provide clear evidence for the statement that both feminine societies as well as societies characterized by a high degree of uncertainty avoidance can more easily improve the flexibility of their labour markets through the mobility of labour. On the contrary, countries characterized by a low degree of uncertainty avoidance can more easily improve the flexibility of their labour markets through the flexibility of wages. However, institutional determinants like employment protection and unemployment benefits have almost no effect on the flexibility of the labour market. So, all the formal laws and rules, which government try to use in order to increase this flexibility, are almost neglectable. Concluding, it might be hard for some governments to try and increase the flexibility of their labour markets, as the country-specific cultural characteristics are not matching the cultural determinants of a flexible labour market.

Keywords: labour market flexibility, labour mobility, wage flexibility, cultural dimensions, formal institutions, multiple regression analysis.

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Chapter 1: Introduction

The most recent financial crisis had a big impact on most countries in the world. In some countries, unemployment rates and budget deficit increased at a rapid pace, while in other countries, the unemployment rates declined. For instance, in Europe, the German unemployment rate declined between 2007 and 2015, while in some Southern-European countries, the unemployment rates doubled¹. The question arises why these variations in unemployment rates exist between countries. Most people argue that particular laws and regulations of the labour market prevent the wages from being adjusted to an efficient level. This holds especially true for laws and regulations that prevent wages from decreasing, which is referred to as labour market rigidities (Elgrably, 2006). This had led to a growing support for deregulation of labour markets, which could create more flexible labour markets. The OECD already marked the importance of labour market flexibility in 1994. The OECD already recommended to increase the flexibility of working-time, employment security and the flexibility of wages in their Jobs Study in the year 1994 (OECD, 1994). The current policy advice from the European Union is mostly in line with the latter recommendations of the OECD (European Commission, 2018). Flexible labour markets can adjust quite easily to certain shocks, like for instance price shocks, losing no or almost no employment. On the contrary, rigid labour markets cannot adjust to such shocks, leading to a higher structural unemployment (Klau & Mittelstadt, 1986).

In general, there is no consensus within the economic field about the 'true' definition of labour market flexibility (Meulders & Wilkin, 1991). To some people, the flexibility of the labour market is associated with the ease to set new wages, while to others, the ease to adjust either the labour force or the working hours are what makes a labour market flexible (Meulders & Wilkin, 1991). In this paper, labour markets flexibility is indicated by wage flexibility as well as labour mobility. The most recent financial crisis revealed some problems of the more rigid labour markets. For instance, employees could not be fired due to employee protection and wages could not be adjusted as easily due to laws and powerful trade unions. The growing support for deregulation of labour markets could potentially cause great problems, as national cultures might play an important role in the effectiveness of these deregulations. Culture consists of various characteristics that are peculiar to a specific group of people, which include norms, values, taboos and other things like religion and music (Idang, 2015). It has previously been argued that the degree of labour market flexibility in a country is associated with the specific culture of that particular country (Black, 2001). The importance of examining this relationship is critical, as when strategies to change the labour market flexibility are implemented, country-specific culture cannot be ignored. There might be various country-specific cultural explanations as to why the labour market is either more or less

¹ Data retrieved from: <https://data.oecd.org/unemp/unemployment-rate.htm>, accessed on 10-6-2019

flexible when compared to other countries. These country-specific cultural determinants may play an even bigger role than the institutional characteristics of a country, as the country-specific cultural characteristics may determine the institutional characteristics as well. Institutions can be defined as 'systems of established and prevalent social rules that structure social interactions' (Hodgson, 2006, p.2). These systems can refer to various things, but laws and rules can be best used as examples for this. This means that the institutional characteristics of a country may refer to the rules and laws that possibly determine the flexibility of the labour market.

For instance, Black (1990; 2001) provides empirical evidence that supports correlations between various institutional characteristics of a country and culture. For instance, inverse relationships were discovered between masculine societies and employment protection, collective bargaining coverage and trade union density. In addition to this, a positive relationship was found between the degree of uncertainty avoidance and employment protection. Last, negative correlations were discovered between the degree of power distance and employment protection and collective bargaining coverage. Next, Black (2001) also discovered that culture directly affects the mobility of labour, as for instance very individualist societies are associated with more mobility of labour. However, as these studies were conducted almost twenty years ago, the question arises whether these relationships still hold.

So, this paper tries to discover what the determinants of labour market flexibility are, and which, cultural or institutional determinants, are more important. If the cultural determinants turn out to be more important, it might be hard for governments to improve the flexibility of their labour markets. In this paper, both the cultural determinants, as well as the institutional determinants of labour market flexibility, will be examined. The cultural determinants are based on the four famous Hofstede (1984) dimensions, while the institutional determinants consist of various variables which are based on previous literature, like for instance Black (1999; 2001). These institutional characteristics mostly refer to certain laws and rules that can possibly affect the flexibility of the labour market, like for instance employment protection and unemployment benefits. There are some previously conducted studies that are closely related to this one (Black, 1999; 2001; Raghuram et al., 2001). As these studies can be considered as relatively 'old', a relevant and up-to-date study with regard to various determinants of labour market flexibility for OECD countries is required. This is important because culture, just as almost everything, changes over time (Creanza et al., 2017). This holds especially true in the time of internet, social media and other rapid (technological) changes, which change the way people think and do. Moreover, the most recent financial crisis might have changed some of the institutional characteristics of a country. So, both national cultures and the labour markets may have changed slightly since these studies, showing the importance of an up-to-date study.

This paper is structured as follows. The following section will describe the general theoretical framework and the way culture and other determinants are incorporated into the analysis. The explanation of the data and methodological approach will be provided in chapter 3, while chapter 4 will present the empirical evidence following this methodological approach. A discussion will be provided in chapter 5, and some concluding remarks will be given in chapter 6.

Chapter 2: Theoretical Framework

This chapter will describe the theoretical framework and the way culture and the other determinants are incorporated into the analysis. This chapter will start with describing the theoretical concept and importance of labour market flexibility. Next, the theoretical framework of Williamson (2000), which is also used in this particular paper, will be explained. The remaining of this chapter will be used to link this general theoretical framework to this specific paper. A total of nine determinants of labour market flexibility will be given. Four of these determinants are coming from the Hofstede (1984) dimensions of culture, namely: masculinity-femininity, uncertainty avoidance, power distance and individualism-collectivism. The remaining five determinants of labour market flexibility consists of employment protection, unemployment benefits, the existence of minimum wages, the power of trade unions and corporatism.

2.1 Labour Market Flexibility

In general, labour market flexibility is considered as an important factor for economic growth and competitiveness of a country (Lind, 2018). But when exactly are labour markets considered flexible? As mentioned earlier, there is no consensus within the economic field about the general definition of labour market flexibility. The famous economist Solow (1998) argued that inflexible labour markets are characterized by a high degree of restrictions on the ability to fire and hire people, powerful trade unions, high levels of unemployment benefits, tightly regulated working hours and strict health and safety regulations. Others, like Klau and Mittelstadt (1986), make a distinction between flexible and rigid labour markets. It is argued that flexible labour markets can adjust to shocks with no or almost no employment loss, while rigid labour markets cannot adjust to these shocks. The adjustments to these kinds of shocks could be the ability to just fire people, but it could also mean that wages can easily be adjusted downwards (or upwards). The inability to adjust to these shocks could potentially increase structural unemployment. More recently, labour market flexibility has been defined as the capability of creating opportunities for employers and employees to meet their demands for qualified workers and jobs (Muffels & Luijkx, 2008, p. 223).

As the previous examples show, labour market flexibility is closely related to the ability of labour markets to adjust to certain shocks, which is most commonly associated with regulations with regard to employee protection. So, this flexibility actually refers to the ability of labour markets to reach an equilibrium state. Certain shocks to the economy can affect the demand, as well as the supply side, moving the market away from equilibrium. A flexible labour market is able to, for instance, adjust the employment level to reach an equilibrium state in which both the demand and

supply side are balanced. On the contrary, an inflexible labour market cannot reach an equilibrium state in which demand and supply are balanced, leading to a situation of disequilibrium.

The consequences of an inflexible labour market thus refer to the linked disadvantages of a situation in which the labour market is in disequilibrium. The fact that supply and demand are not in an equilibrium state are accompanied by certain disadvantages. The main negative effect of an inflexible labour markets is most commonly illustrated by the differences with regard to unemployment rates between Europe and the United States. It has been shown that the more heavily-regulated European labour markets tend to be associated with higher unemployment rates than the looser labour market of the United States (Öner, 2012). A recent example of this was illustrated by times of the most recent financial crisis, in which most European countries experienced higher unemployment rates than the unemployment rates in the United States. The association between inflexibility and higher unemployment is strongest for younger people (Chassin, 2013). Moreover, in addition to the fact that inflexible labour markets are associated with higher unemployment rates, is the tendency of inflexible labour markets to have weaker job creation (Bernal-Verdugo et al., 2012). Flexible labour markets, however, are generally associated with a high degree of uncertainty for both employees as well as employers (Chassin, 2013).

As previously mentioned, there is no consensus within the economic field about the true definition of labour market flexibility. To some people, the flexibility of the labour market is characterized by the ease to set new wages, while to others, the ease to adjust either the labour force or the working hours are what makes a labour market flexible (Meulders & Wilkin, 1991). For this reason, the labour market flexibility has been split up into two components, namely labour mobility and wage flexibility. With regard to the mobility of labour, the focus is mainly on numerical flexibility. Numerical flexibility can be defined as 'the ability of the firm to adjust the quantity of labour to meet fluctuations in demand' (Arvanitis et al., 2003, p.3). This can be achieved through various ways; through permanent and temporary time contracts, through lay-offs and through variance in working hours. In this paper, labour mobility is measured as the share of permanent contracts. So, a percentage of eighty refers to a situation in which eighty percent of the total labour force has a permanent contract, and twenty percent of the total labour force has a temporary contract. This means that a higher share of permanent contracts indicates labour immobility, while a high share of temporary contracts refers to a situation of labour mobility. Thus, from now on, the share of permanent contracts is used instead of the term labour mobility to prevent confusion.

Moreover, wage flexibility is most commonly defined as 'the responsiveness of wages to market disequilibrium' (Goubert & Omeij, 1996, p. 199). But this ability of markets to respond differs between markets. In some markets, wages can be easily adjusted downwards, while in other markets, adjusting wages is very hard. Because of time restrictions, wage flexibility is measured as

the variation in real wages. Various reasons why the ability of markets to adjust wages exist. The remaining of this chapter will describe and explain some of these reasons. At the end of this chapter, a theoretical framework including various determinants of both wage flexibility and the share of permanent contracts will be provided.

2.2 The Theoretical Framework

The central idea in this paper is that culture, institutions and economic performance of a country are somehow related. Culture can be defined as ‘the collective programming of the mind which distinguishes the members of one group or category of people from another’ (Hofstede et al., 2010, p. 6). Culture can be transmitted from one generation to the next generation. All individuals develop a mental model which is used to evaluate various actions and signals of either themselves, or others. These mental models are, to a limited extent, genetic, but are mostly the result of experiences of the individual and through communication between individuals (Denzau & North, 1994). As the latter is the most important determinant of mental models, similarities between the mental models of these individuals exist. These similarities are codified in what we call culture. Institutions are what we refer to as ‘the rules of the game in a society’ (North, 1991, p. 477). These institutions can structure and guide a society to a certain direction. A distinction can be made between formal and informal institutions. This distinction is common within the economic field, whereas formal institutions refer to things such as written rules and legislation, informal institutions may refer to norms and values. The differences between societies with regard to their norms and values is what makes their culture differ. Every culture has its own norms and values, which may thus set them apart from other cultures.

The institutional framework for a country or society is the result of the shared mental models of the individuals (Denzau & North, 1994). The economic outcome or performance of a country is to a large extent determined by these institutions. The way individuals deal with these institutions is based on their mental models, and is thus based on culture. So, various cultural requirements may be necessary for institutions to actually work within society. For example, it has been argued that individualism is a cultural requirement for a market society (Lane, 1983). It can be argued that a stable economic system is legitimized by a supportive cultural system (Inglehart, 1997).

Figure 1. depicts the relationships between culture, institutions and economic performance. This figure is closely related to the figure used in Williamson (2000), just embeddedness has been replaced by culture in this figure. Moreover, this particular figure puts the various levels on a horizontal axe, while Williamson (2000) puts the levels on a vertical axe. This is in line with de Jong (2009). Williamson puts the levels on a vertical axe because he assumes that the higher levels

constraint the lower levels. This comes with the assumption that the higher levels change much slower than the lower levels. Williamson argues that changes in the highest level (embeddedness level) takes 100 to 1000 years, while formal institutions can change between 10 to 100 years. The assumption that changes occur very slow can be challenged, especially in this time of rapid technological changes and the influence of social media. This is illustrated by what Denzau and North (1994) call the 'punctuated equilibrium', which illustrates that periods of almost no change can be followed by periods of rapid changes. As previously mentioned, this current period of time which is characterized by rapid technological changes can be seen as a typical example of the punctuated equilibrium. For this reason, changes are allowed to occur more rapidly, which is illustrated by the horizontal ordering of the various levels in figure 1. The remaining of this chapter will describe how this particular theoretical framework can be used with regard to labour market flexibility.

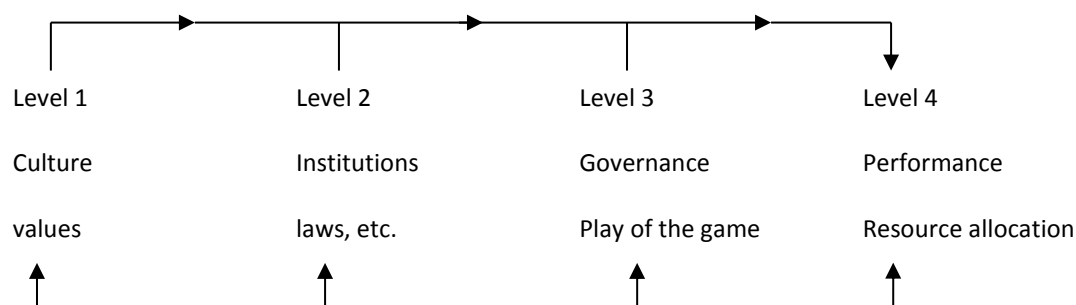


Figure 1. Theoretical Framework

2.3 Formal Institutions

As mentioned before, a distinction can be made between both formal and informal institutions, whereas formal institutions refer to things such as written rules and legislation, while informal institutions refer to norms and values. In this paper, three different formal institutions are expected to influence wage flexibility and the share of permanent contracts, namely; employment protection, unemployment benefits and the existence of minimum wages.

2.3.1 Employment Protection

At this point in time, most OECD countries encounter at least some form of employment protection. Employment protection can cover various forms of protection, for example; dismissals protection, laws against discriminating disabled people and protection with regard to hiring and paying (Addison & Teixeira, 2003). Dismissals protection, which refers to the rules against easy firing, is the most well-known form of employment protection. With these formal rules, employees cannot be fired as easily as would be the case without them. Strong employment protection could pose problems in

economically bad times, as employees cannot be fired while firms have the necessity to do so. The increasing force of temporary workers have been a growing 'problem' for trade unions, as they are challenging their traditional form of representation (Gumbrell-McCormick, 2011). Some trade unions discriminate the temporary workforce, raising the inequality between the well-protected core members of trade unions and the growing force of temporary workers (Palier & Thelen, 2010). So, the employment protection is generally stronger for permanent employees than for temporary employees, making the temporary employees more vulnerable. Various studies have found that the higher firing costs associated with stronger employment protection, ensure companies to hire more less-protected temporary workers (Autor, 2003; Booth et al., 2002; Kahn, 2007). So, it can be expected that stronger employment protection is associated with a smaller share of permanent contracts, and thus more labour mobility.

On the contrary, it can be argued that the flexibility of wages is not influenced by the strength of employment protection. The argument is based on what is called severance payments; the amount employees get from their employers when fired. Such agreements are commonly made in contracts, especially in more developed countries. The famous work of Lazear (1990) predicts that these severance payments, which are a form of employment protection, will have no real effect on, for instance, wages. This is mostly due to the fact that employers will make workers prepay these severance costs (Leonardi & Pica, 2007). So, as employees probably pay these severance costs themselves, no significant relationship can be expected between employment protection and the flexibility of the wages.

Hypothesis 1: *Employment protection is negatively related to the share of permanent contracts and not significantly related to wage flexibility.*

2.3.2 Unemployment Benefits

Getting fired can be devastating for families that do not have the resources to live without a fixed income. Luckily, nowadays most OECD countries have some sort of guaranteed minimum unemployment benefits, except for Greece, Italy and Turkey (OECD, 2019 & Adema et al., 2019). Economic theory predicts that higher levels of unemployment benefits leads to higher unemployment duration (Mortensen, 1977). This is due to the fact that the hazard of leaving unemployment becomes lower due to the higher levels of unemployment benefits (Bover et al., 2002; Brodsky, 1994). This could possibly mean that people themselves do not really strive for permanent employment as would be the case when unemployment benefits were really low. Having a temporary contract is not that bad when having the certainty of getting a decent amount of money

due to unemployment benefits after the temporary contract expires. So, less permanent employment, and thus more flexible labour markets, can be expected in countries which experiences high levels of unemployment benefits.

But the question remains how big that share of people actually is, as temporary contracts or unemployment itself still comes with certain other risks. The fact that unemployment benefits are still lower than earning a decent wage is not in line with the capitalist need to strive for more. Moreover, the risk to lose the 'safe' situation might be something that still drives people to prefer a permanent contract over a temporary contract, a concept which is referred to as prevention focus (Lieberman et al., 2001). So, arguments can be made for both a positive as well as a negative relationship between the share of permanent contracts and the unemployment benefits. It is impossible to hypothesize which side of the argument, the positive or the negative side, will have the upper hand. As one argument points to a positive relationship between the two, and one arguments points to a negative relationship between the two, it is hard to predict the direction of this particular relationship. Therefore, no significant relationship between the unemployment benefits and the share of permanent contracts is expected.

But how do these unemployment benefits relate to wage flexibility? This can be illustrated by a situation of increasing unemployment benefits (Spiezia, 2000). High unemployment benefits indicate low costs of unemployment, as being unemployed still yields a substantial amount of money. This increases the incentive for workers to shirk or even quit, which means that firms have to offer a higher wage to prevent this from happening. Thus, higher unemployment benefits are expected to increase the flexibility of wages, as firms have to adjust the wages as a consequence of the higher unemployment benefits. So, the following hypothesis can be formulated:

Hypothesis 2: *Unemployment benefits are positively related to wage flexibility and not significantly related to the share of permanent contracts.*

2.3.3 The Existence of Minimum Wages

Nowadays, most European countries have formal rules concerning minimum wages (Schulten, 2006). These low-wages regulations are mostly subjected to the collective bargaining process, whereas minimum wages are part of the collective bargaining agreements (Alsos & Eldring, 2008). However, there are still some countries that do not have formal rules with regard to minimum wages, of which Austria, Norway and Sweden are just some examples (Eurostat, 2018; Adema et al., 2019). The variable of the existence of minimum wages is treated as a dummy variable with only two categories in this analysis; yes, there exists a minimum wage, or no, there is no minimum wage present. So, this

variable does not measure the height of the minimum wages, but only looks at the existence of the minimum wages for the OECD countries. Therefore, the arguments for a possible relationship between the existence of the minimum wages and both wage flexibility as well as the share of permanent contracts, will not consider the height of the minimum wages. This will be further clarified in Chapter 3.

As there are still some countries that do not have minimum wages, it can be very risky to have a temporary contract. At the specified end-date of a temporary contract, people will end up in a situation with no form of income. On the contrary, in countries where minimum wages are present, people will, after the end-date of the temporary contract, at least have some income in the form of the minimum wage. So, it can be expected that people in countries with no minimum wage prefer a permanent contract over a temporary contract, due to the risk of having no income at all. However, as companies are the ones that actually hire people, the question remains what do companies prefer; permanent or temporary contracts in the presence or absence of minimum wages? As for companies, they will probably not really care about having either permanent or temporary contracts in the presence of minimum wages, as this decision is not really related to the presence minimum wages. Only in the situation of a large demand for labour, which increases the negotiation position of employees, employees actually have something to demand with regard to choosing between a permanent or temporary contract. In a situation of large labour supply employees are not in the situation to choose between jobs, between companies and between permanent and temporary contracts. So, it can again be expected that there is no significant relationship between the existence of minimum wages and the share of permanent contracts present.

The relationship between the existence of minimum wages and wage flexibility can be defined more easily, as a higher minimum wage gives less room to deviate from current wages. Wages can only be adjusted downwards up to a certain point, namely the minimum wage level, which leaves less overall room for deviations (Elgrably, 2006). Although, wages can also have certain spill over effects on groups of workers other than the low-skilled ones. Some people want to maintain wage differences due to job status or skill level. These spill over effects are most commonly stronger for groups of workers who are relatively close in terms of wages to the minimum wage. Again, this shows some ambiguousness in the relationship of minimum wages and labour market flexibility. But as minimum wages do not change every year (at least in nominal terms), this effect should be off-set by the more general constraint of minimum wages, leaving less room for wage deviations. So, the existence of minimum wages constrains wages to decrease only up to a certain point, lowering the overall flexibility of the wages. Thus, the following hypothesis can be formulated:

Hypothesis 3: *The existence of minimum wages is negatively related to wage flexibility and not significantly related to the share of permanent contracts.*

2.4 Play of The Game

Now, the influence of the power of trade unions and the degree of corporatism on the flexibility of the wages as well as on the share of permanent contracts will be discussed.

2.4.1 The Power of Trade Unions and Wage Flexibility

One of the reasons why wages tend to be sticky, either upwards or downwards, is due to the power of trade unions. Trade unions tend to play an important role, especially in many of the Western countries. Although membership of such unions has declined in, for instance, most European countries, the overall importance of these unions has been either stable or rising (Crouch, 2017). Trade unions try to protect the collective working conditions of employees within a labour market by, for instance, signing collective labour agreements (Traxler, 1996). Firms, institutions and other work places have to follow these signed contracts which can regulate wages, responsibilities, working conditions and many more. These agreements tend to vary heavily between sectors. The outcome depends on various things, like for instance union power, union coverage and the degree of competition (Layard et al., 2005). Wages can either be adjusted downwards or upwards, but some rigidities arise when, for instance, companies try to do this. Upward wage rigidity makes it hard to raise the wages, which indicates that it is challenging to move the benefits from a company to the workers (Chen, 2018). On the contrary, downward wage rigidity makes it hard to lower the wages. This means that companies face challenges when trying to let the benefits flow from the workers to their company (Chen, 2018). Trade unions are related to both upward and downward wage rigidity. It is seldom that firms in developed countries cut wages, even in the presence of high unemployment rates and strong competition for jobs (Franz & Pfeiffer, 2006). Hour's reduction and workers' displacements are used more often in economically bad times, which result in the labour markets being in disequilibrium.

Why would this imperfect labour market still come up, even though we are perfectly aware of this particular situation? One of the answers refers to the power of trade unions. As trade unions bargain for collective labour agreements, which also incorporates wage bargaining, wages cannot be adjusted as easily in economically bad times as hour's reduction and workers' displacement. As deviation from the collective labour agreements by firms would probably end up badly, in for instance, law suits, deviation from the agreements is practically impossible. This indicates that powerful trade unions can be seen as one of the determinants of the rigidity of wages in a particular

country. Strong, influential trade unions are expected to hold wages sticky, due to their collective bargaining power.

So, it can be expected that powerful trade unions keep wages from moving away, either upwards or downwards. This implies a negative relationship between the power of trade unions and wage flexibility, as wages will deviate less because of the influential trade unions. Wages can be adjusted only when an agreement is reached with the trade unions.

2.4.2 The Power of Trade Unions and The Share of Permanent Contracts

Powerful trade unions might also influence the share of permanent contracts in a particular country. Empirical evidence suggests that unionised employees are less mobile in comparison to non-unionised workers (Elias, 1994; Mincer, 1981). Unionised employees are associated with lower quit rates, reductions in exit behaviour and higher job tenure. Especially the latter one, higher job tenure, indicate more permanent contracts instead of temporary contracts. Freeman (1980) argues that trade unions lead to better agreements between both employer and employee with regard to wages, extend of contract and working conditions. Better arrangements with regard to these things might increase the trust both the employer and employee have. As mentioned before, the increasing force of temporary workers have been a growing 'problem' for trade unions, as they are challenging their tradition form of representation (Gumbrell-McCormick, 2011). Some trade unions discriminate the temporary workforce, raising the inequality between the well-protected core members of trade unions and the growing force of temporary workers (Palier & Thelen, 2010). So, the employment protection is generally stronger for permanent employees than for temporary employees, making the temporary employees more vulnerable. Various studies have found that the higher firing costs associated with stronger employment protection, ensure companies to hire more less-protected temporary workers (Autor, 2003; Booth et al., 2002; Kahn, 2007). So, countries which are characterized by powerful, influential trade unions will experience more temporary employment, and thus labour mobility. Companies will have an incentive to choose the less protected temporary employees over the more protected, potentially costlier permanent employees. So, it is expected that:

Hypothesis 4: *The power of Trade Unions is negatively related to both the share of permanent contracts and to wage flexibility.*

2.4.3 Corporatism

Some countries are characterized more by cooperation and coordination in comparison with other countries. Important characteristics of corporatism are: 'large, almost monopolistic organized interest groups; overt, explicit interaction with the government; coordination of actions within the organized interest groups across large segments of the economy' (Teulings & Hartog, 1998, p.27). A higher degree of corporatism can be attained if (1) parties have trust in each other, (2) enjoy certainty and predictable situations, (3) avoid competition and conflict, and (4) less future discounting (de Jong, 2009). Corporatism within the economic field can be characterized and measured by a high degree of trade-union participation (Lehmbruch, 2003; Wachter, 2007). So, more corporatist countries are typically characterized by a higher degree of trade-union participation. Empirical evidence suggests that trade union participation is typically lower amongst temporary workers (Campbell, 2005). This means that due to the growing share of temporary workers, trade union influence, strength and density is being challenged. This suggests a positive relationship between the degree of corporatism and the share of permanent contracts.

But how does the degree of corporatism relate to wage flexibility? Trade union density does not tell the whole story, as collective bargaining coverage can be very high, even though the trade union density is relatively low. Trade union density does not express the power and influence of these trade unions, something that the collective bargaining coverage does (Crouch, 2017). However, the current trend of declining density rates is threatening the legitimacy of the collective agreements and the bargaining power of unions themselves (Hijzen et al., 2017). This holds especially true for sectors which are characterized by a high degree of younger employees. Both the challenging and threatening characteristics of declining density rates can indicate a lower influence of trade unions. This could mean that collective agreements with regard to wages would be less influential, giving wages more flexibility to move either upwards or downwards. So, it can be expected that a lower degree of corporatism to be associated with a higher degree of wage flexibility, as trade unions lose their power due to the declining density rates. So, it is expected that:

Hypothesis 5: *Corporatism is positively related to the share of permanent contracts and negatively related wage flexibility.*

2.5 Influence of Culture

Four cultural dimensions are distinguished by Hofstede (1984). Its main characteristics will be presented in this section. These dimensions were designed to examine value orientations of people from different countries. Societies were linked to certain scores based on questions. Hofstede identified four dimensions based on these questions and corresponding scores on which cultures

differs between countries. Four dimensions were distinguished by Hofstede (1980), namely: masculinity-femininity, uncertainty avoidance, power distance and individualism-collectivism. Hofstede (2011, p.10 to 12) has identified ten major differences between societies that score either high or low on a certain dimension. Table 1 to 4 in the Appendix provide these major differences for the four cultural dimensions. These major differences give an idea of the typical characteristics which are associated with a certain dimension score. The different cultural dimensions will influence the degree at which the previously mentioned factors influence wage flexibility and the share of permanent contracts. The identified dimensions will be related to the institutional determinants that explain both the wage flexibility and the share of permanent contracts. This means that it is expected that the cultural dimensions have an indirect effect on the flexibility of the labour market. So, for example, it can be expected that masculinity will be negatively related to the unemployment benefits and the employment protection, Then, it can also be expected that masculinity will be positively related to the share of permanent contracts and negatively to the flexibility of wages. This can be hypothesized as employment protection is expected to be negatively related to the share of permanent contracts while the unemployment benefits are hypothesized to be positively related to the flexibility of the wages.

2.5.1 Masculinity-Femininity

Masculinity-Femininity (MAS) refers to the division of emotional roles between women and men (Hofstede et al., 2011). It covers the attitude of the society towards the separation of sexes. Men's values are typically linked to very assertive and competitive, which differs heavily from the proposed caring and modest value of women. The more assertive and competitive values are most commonly referred to as masculine, while the more modest and caring values are referred to as 'feminine'. Moreover, feminine societies tend to put more stress on equality and solidarity, while more masculine societies put stress on competition, support for the strong and tend to fight out conflicts (Hofstede, 1984).

As masculine societies are typically characterized by more competition and less support for the weak, employment protection, unemployment benefits and minimum wages are expected to be less important. The weak, or 'the poor', are less supported due to the admiration for the strong in more masculine societies. This could indicate a negative relationship between more masculine societies and the power of trade unions, as there is less need for more influential trade unions that can support the weaker in society more easily. Moreover, more masculine societies tend to be more competitive, indicating less need for collective bargaining coverage. This can also be argued for the variable of corporatism, as corporatism is measured as the trade union participation. More masculine

societies will not feel the need to participate in trade unions, as they care less about the weaker groups. The less emphasis of more masculine societies on the support of the weak also implies a negative relationship with unemployment benefits, the existence of minimum wages and employment protection, which actually helps the weak. The following hypothesis can thus be formulated:

Hypothesis 6a: *The degree of MAS is negatively related to employment protection, unemployment benefits, the power of trade unions, corporatism and the existence of minimum wages.*

So, it is hypothesized that masculinity is negatively related to all five institutional determinants. Earlier, these five institutional determinants were hypothesized against both the flexibility of the wages as well as to the share of the permanent contracts. Employment protection and the power of trade unions are expected to be negatively related to the share of permanent contracts. On the contrary, corporatism is hypothesized to be positively related to the share of permanent contracts. So, it is expected that a higher degree of masculinity lowers both the employment protection as well as the power of the trade unions. In addition, the hypothesized negative relationships between these two institutional determinants and the share of permanent contracts, indicate that lower values of these determinants will actually increase the share of permanent contracts. As two institutional determinants are expected to be negatively related to the share of permanent contracts, while only one institutional determinant is hypothesized to be positively related to the share of permanent contracts, the degree of masculinity is hypothesized to be positively related to the share of permanent contracts. This way of thinking will also be used for predicting the other relationships between the cultural determinants and both wage flexibility and the share of permanent contracts.

Moreover, it was earlier hypothesized that corporatism, the existence of minimum wages and the power of trade unions are negatively related to the flexibility of the wages, while the unemployment benefits are expected to be positively related to wage flexibility. In addition, masculinity is expected to be negatively related to all the institutional determinants. The three predicted negative relationships between masculinity and the institutional determinants indicate that the degree of masculinity is positively related to the flexibility of wages. So, hypothesis 6a stated otherwise:

Hypothesis 6b: *The degree of MAS is thus positively related to both the share of permanent contracts and wage flexibility.*

2.5.2 Uncertainty Avoidance

Uncertainty avoidance (UA) refers to the extent to which a culture makes its inhabitants feel either comfortable or uncomfortable in situations which are unstructured (Hofstede, 2011). These unstructured situations are characterized by surprises and unknown things; the situation is different from 'normal' situations. Most commonly, societies that score high on uncertainty avoidance tend to minimize the possibility of such unstructured situations by strict laws, rules, norms and values. On the other hand, societies that score low on the uncertainty avoidance dimensions are characterized by fewer rules and more tolerance of different opinions. Societies which score low on uncertainty avoidance accept the unknown much more easily when compared to societies that score high on uncertainty avoidance.

A high degree of uncertainty avoidance is characterized by minimalization of unstructured situations, which people try to minimize by laws and rules. This leads to the expectation that societies that score high on the uncertainty avoidance dimension are expected to have more employment protection, unemployment benefits and are typically characterized by the existence of minimum wages. These formal institutions can help prevent the uncertain situation of unemployment with strong employment protection. Moreover, minimum wages and unemployment benefits can prevent the uncertainty with regard to the ability of paying your bills.

Hypothesis 7a: *The degree of UA is positively related to employment protection, unemployment benefits and the existence of minimum wages.*

It is expected that the degree of uncertainty avoidance is positively related to employment protection, unemployment benefits and the existence of minimum wages. Earlier, a negative relationship was hypothesized between employment protection and the share of permanent contracts. It can therefore be expected that the indirect effect of uncertainty avoidance on the share of permanent contracts is also negative. Moreover, a positive relationship was expected between unemployment benefits and the flexibility of the wages, while a negative relationship was predicted between the existence of minimum wages and wage flexibility. This immediately shows ambiguity in the possible relationship between the degree of uncertainty avoidance and the flexibility of the wages, as one relationship points to a negative direction, while the other relationship points to positive direction. However, the minimum wages are always placed higher than the unemployment benefits in a country. So, it can therefore be expected that the existence of minimum wages has a bigger influence on the flexibility of the wages when compared to the effect of the unemployment benefits on wage flexibility. So, hypothesis 7a stated otherwise:

Hypothesis 7b: *The degree of UA is thus negatively related to both the share of permanent contracts, and the wage flexibility.*

2.5.3 Individualism-collectivism

Individualism-collectivism (IDV) refers to the degree to which people within a society are organized in groups. In individualist societies people are only loosely tied together and every actor is expected to look after him/herself and his/her family (Hofstede, 2011). On the contrary, collectivist societies are characterized by strong cohesive groups which protect each other and oppose other groups in exchange for loyalty. These differences are best typified as either the collectivist 'We' society, or the more individual 'I' societies.

As a high degree on the IDV-index is characterized by a strong 'I'-consciousness, cooperative concepts like trade unions and corporatism are expected to have no to little influence. Moreover, this 'I'-consciousness could also convert itself into having no minimum wages, unemployment benefits and employment protection, although this could be off-set against the fact that these formal institutions could also benefit the individuals themselves. The current (financial/work) situation of an actor might influence this decision heavily, as an unemployed individual could benefit from higher unemployment benefits. So, it can be expected that there will be no relationship between the degree of individualism and unemployment benefits, the existence of minimum wages and employment protection. The following hypothesis can thus be formulated:

Hypothesis 8a: *The degree of IDV is negatively related to corporatism and the power of trade unions.*

Both the power of trade unions as well as corporatism are hypothesized to be negatively related to the flexibility of the wages. As the degree of individualism is expected to be negatively related to both of these institutional determinants, a positive relationship can be hypothesized between individualism and the flexibility of the wages. However, the indirect effect of individualism on the share of permanent contracts is more ambiguous. Earlier, a negative relationship between the power of trade unions and the share of permanent contracts was predicted, while a positive relationship was expected between corporatism and the share of permanent contracts. It is almost impossible to predict beforehand which relationship, the negative or the positive one, will have a bigger influence on the indirect effect of individualism on the share of permanent contracts. Therefore, no significant relationship is expected between individualism and the share of permanent contracts. However, it could well turn out that the analysis discovers a clear relationship between individualism and the

share of permanent contracts, but beforehand, this cannot be predicted. So, hypothesis 8a stated otherwise:

Hypothesis 8b: *The degree of IDV is thus positively related to wage flexibility and not significantly related to the share of permanent contracts.*

2.5.4 Power Distance

Power distance refers to the extent to which the less powerful actors accept the fact that the power within the society or organization is distributed unequally (Hofstede, 2011). Societies that score high on the power distance dimension believe that inequality with regard to power is necessary in order to provide the best protection for everyone. These societies accept a hierarchical order more easily than societies which score low on the power distance dimension.

Typical cooperative concepts like trade unions and corporatism will not play an important role in societies with a high power distance due to their hierarchical characteristic of a large distance of power between employees and employers. Societies scoring high on the power distance dimension are expected to be characterized by low unemployment benefits, as these societies expects and accepts the inequality with regard to power and wealth more easily (Oyserman, 2006; Winterich & Zhang, 2014). As the minimum wage variable measures only whether or not a country has a statutory minimum wage, no relationship can be expected between minimum wages and the degree of power distance. As the height of the minimum wages is not taken into consideration, it does not tell us a lot with regard to power distance. Moreover, it is expected to find no significant effect between the degree of power distance and employment protection as power distance focusses on the acceptance of power and not on protection. The following hypothesis can thus be formulated:

Hypothesis 9a: *The degree of power distance is negatively related to corporatism, the power of trade unions and unemployment benefits.*

Earlier, it was hypothesized that corporatism and the power of trade unions are negatively related to the flexibility of the wages. On the contrary, unemployment benefits are expected to be positively related to wage flexibility. So, two institutional determinants are expected to be negatively related to the flexibility of the wages, while only one institutional determinant is predicted to be positively related to the wage flexibility. This means that the indirect effect of power distance on the flexibility of the wages is expected to be positive. Again, an ambiguous relationship comes up when predicting

the relationship between power distance and the share of permanent contracts. A positive relationship between corporatism and the share of permanent contracts was hypothesized earlier, while a negative relationship between the power of trade unions and the share of permanent contracts is expected. This means that no significant relationship is hypothesized between the share of permanent contracts and the degree of power distance. It could turn out that the negative and positive effect of both the power of trade unions and corporatism balance each other out, or that a clear relationship is discovered which takes a negative or positive value. So, hypothesis 9a stated otherwise:

Hypothesis 9b: *The degree of power distance is positively related to wage flexibility, and not significantly related to the share of permanent contracts.*

2.6 Theoretical Framework

Following the previously described relationships, the theoretical framework that was mentioned in section 2.2 can be filled in. Level 1 consists of the four cultural dimensions of Hofstede (1980), namely; masculinity, uncertainty avoidance, power distance and individualism. Level 2 consists of the following formal institutions; employment protection, unemployment benefits and the existence of minimum wages. The power of trade unions and corporatism form the ‘play of the game’, which is level 3. The economic performance of level 4 is formed by both wage flexibility and the share of permanent contracts.

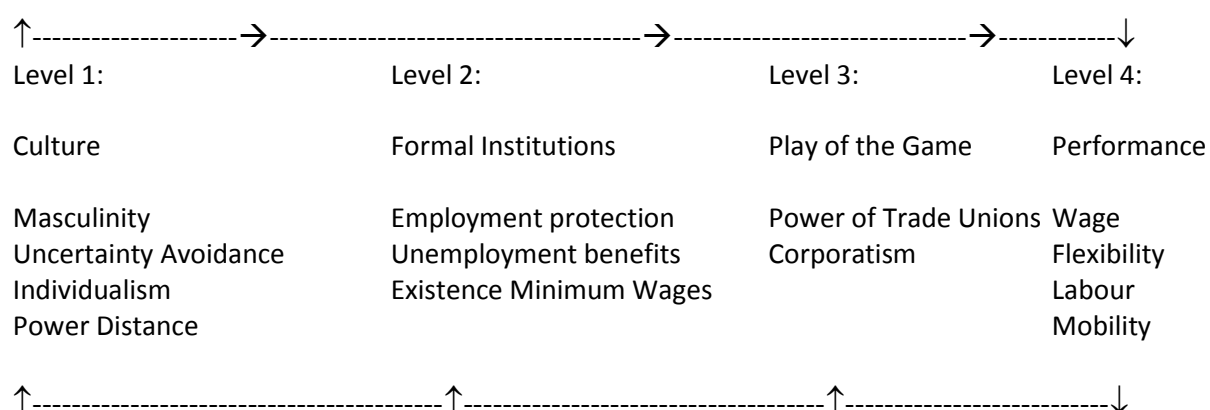


Figure 2. Theoretical Framework

Figure 3 to 6. depict the previously described relationships between the four cultural determinants, the five institutional determinants, the share of permanent contracts and wage flexibility. Every arrow on the left side of the figures is accompanied by at least one sign; either a positive or negative sign. The positive sign indicates a positive relationship while a negative sign expresses a negative

relationship between two variables. The arrows on the right-hand side of every figure is accompanied by a total of two signs. The signs placed above the arrows express the relationship between one of the five institutional determinants and wage flexibility, while the signs placed beneath the arrows illustrate the relationship with the share of permanent contracts and the institutional determinants. Next to a plus or negative sign, plus/minus signs are also used which indicate no significant relationship between two variables.

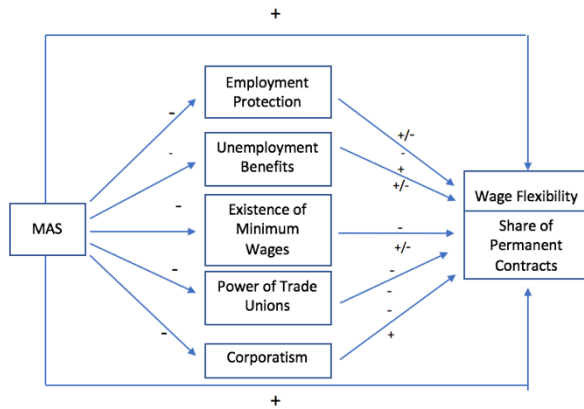


Figure 3. Summary of Relationships MAS

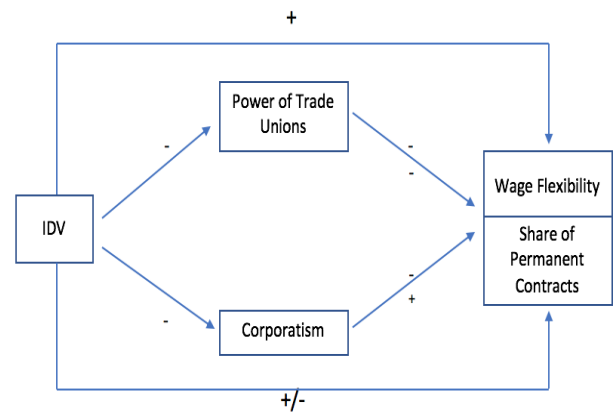


Figure 4. Summary of Relationships IDV

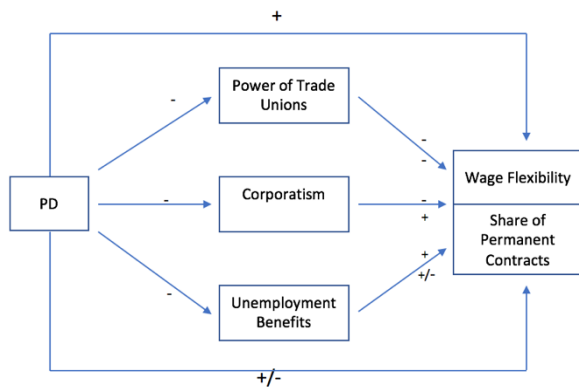


Figure 5. Summary of Relationships PD

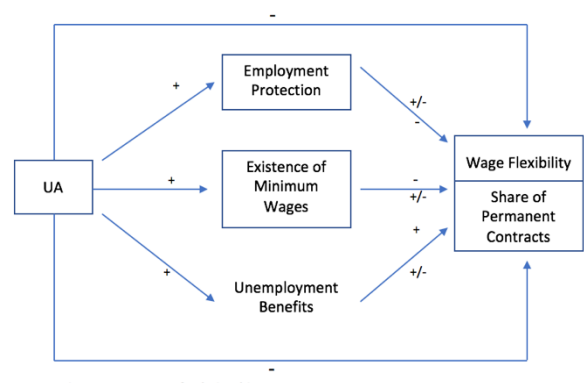


Figure 6. Summary of Relationships UA

Chapter 3: Data and Methodology

This chapter will discuss both the data and the method that are used in the regression analysis.

3.1 Data

Thirty-six Countries are currently official members of the Organisation for Economic Co-operation and Development (OECD). The two most recently joined members are Latvia and Lithuania, who respectively joined in 2016 and 2018. Unfortunately, almost no data is available for these two countries for most variables. Moreover, Iceland has no data on the four cultural dimensions of Hofstede. These three countries are therefore excluded from the analysis. The data for the other thirty-three OECD member states will be analysed for a total of four periods in time, namely; period 1991-1999, 2000-2006, 2007-2011 and 2012-2013. The latter two periods are distinguished because of the most recent financial crisis. The 2007-2011 period reflects the period of the financial crisis, while the 2012-2013 period reflects the aftermath of the financial crisis. Distinguishing these two periods might be interesting, as the most recent financial crisis might have changed the flexibility of labour markets. Big shocks to the economy, like the financial crisis, could lead to various changes with regard to regulations, laws and the perception about the economy of governments. Moreover, the period before the financial crisis has been divided into two different time periods, due to the fact that otherwise, the differences in the length of time between the periods would be too big.

The data with regard to the following variables are extracted from the OECD database²: wage flexibility, the share of permanent contracts, employment protection, unemployment benefits, the power of trade unions, the existence of minimum wages and corporatism. For all variables, the data are available from 1990 to 2013. Because wage flexibility is calculated by taking the differences in the average real wages between two years, the year 1991 is the first year that could be calculated in this way. Data for average real wages for the year 1989 were not available. In addition to the OECD database, the paper of Adema et al. (2019)³ is used to check when minimum wages were introduced in some OECD countries. The conceptualisations of all the variables are in line with the measurement of the OECD² itself.

Due to the absence of a better indicator, wage flexibility is measured as the variation in real wages. A better indicator is present in, for instance, the form of nominal wage rigidity. Calculating this nominal wage rigidity is both time-consuming and difficult. Various papers have calculated this

² Data obtained from https://stats.oecd.org/Index.aspx?DataSetCode=EPL_OV, accessed on 10-04-2019.

³ Data obtained from Adema, J., Giesing, Y., Schönauer, A., & Stitteneder, T. (2019). Minimum Wages Across Countries. ifo DICE Report, 16(4), 55-63.

nominal wage rigidity, but only for different time periods and countries (Holden & Wulfsberg, 2008; Smith, 2000), which means that these nominal wage rigidities cannot be used for this particular analysis.

In line with previous studies, labour mobility is measured as the share of permanent contracts over the total number of contracts (Altuzarra & Serrano, 2010; Zhou & Dekker & Kleinknecht, 2011; Arvanitis, 2003; Doukidis et al., 2004). This indicator is measured as the percentage of people of the workforce that has a permanent contract. This means that the measure actually reflects labour immobility, something which has to be taken care of when interpreting the coefficients. So, a negative coefficient of one of the determinants on labour mobility actually means that, when for instance, the employment protection is stronger, a lower number of permanent contracts will be present, indicating a higher labour market flexibility.

Employment protection is measured as 'the strictness of employment protection with regard to individual and collective dismissals'. This is measured as a scaled variable which is based on the statutory laws, collective bargaining agreements, case laws and the advice of experts from countries.

Unemployment benefits are measured as the 'adequacy of Guaranteed Minimum Income benefits'. This indicator measures the income of people without a job by looking at minimum income and other safety-net benefits, like for instance, housing benefits.

The variable regarding the power of trade unions is measured as the collective bargaining coverage. The collective bargaining coverage measures the ratio of employees which are covered by the collective bargaining agreements.

Corporatism is measured as the degree of trade union participation. This indicator measures the percentage of the total workforce that is a unionised member.

The variable with regard to the existence of minimum wages is treated as a dummy variable, indicating whether a country has a minimum wage or not. In addition to the OECD database, the work of Adema, Giesing, Schönauer and Stitteneder (2019) is used to check when countries introduced the minimum wages.

The data on the four Hofstede (1984) dimensions will be gathered from the database of Hofstede himself². This database is updated until 2012. Table 5. in the Appendix presents the values on the four cultural dimensions from Hofstede for all thirty-three OECD countries. A high value on uncertainty avoidance displays the need to minimize the occurrence of unknown situations. People tend to implement rules, laws and regulations to minimize this chance. On the contrary, societies with low values of uncertainty avoidance accept the unknown situations and will implement lesser rules, laws and regulations. A high value on the dimension of individualism-collectivism refers to a society being individualistic. In these societies, it is expected that individuals only take care of themselves and their families. But, in collectivist societies, it is expected that individuals take care of

themselves, families, relatives or members of a particular group. The difference between an individualist and collectivist society is most commonly defined by terms 'I' and 'we', in which an individualist society is defined by the 'I'-feeling, while a more collectivist society is defined by the 'we'-feeling. Last, a high value on the masculinity-femininity dimension indicates a society which prefer achievement, heroism, assertiveness and material rewards. Competitiveness is more present in these societies, which is referred to as masculine societies. On the other hand, feminine societies prefer cooperation, modesty, caring for the weak and quality of life.

Several control variables are included in the analysis, namely; (1) the openness of the economy (Rodrik, 1998), (2) the GDP per capita, (3) the size of the agricultural sector in a country. Rodrik (1998) argues that open economies are exposed to more external risk. Due to this exposure, governments of more open economies try to protect their markets more heavily in comparison to other governments. More protection of internal markets could be projected in, for instance, more employment protection. This could possibly indicate a positive relationship between the openness of an economy and labour mobility.

The GDP per capita is included as a control variable, something that is common when using these types of cultural analysis (Bagchi et al., 2003). Hofstede (2001, p. 68) argues that 'if hard variables (economic, biological, technological) predict a country variable better, cultural indexes are redundant.' Last, temporary contracts are more present in the agricultural sector (OECD, 2002). This indicates that a lower share of permanent contracts, and thus more labour mobility, can be expected in countries which still have a large agricultural sector.

3.2 Methodology

As two dependent variables are present, namely the share of permanent contracts and wage flexibility, several regressions will be run. Regressions techniques which include the use of two dependent variables are available in the form of multivariate analysis or multivariable analysis (Hidalgo & Goodman, 2013), but are not used in this particular paper. As the different determinants of both the share of permanent contracts and the wage flexibility are examined, using multiple regressions analysis with just one dependent variable is valid. Moreover, multiple regression analysis allows for the inclusion of more than just one independent variable, and allows to predict the relative effect of each predictor variable (Mason & Perreault, 1991). This is necessary, as the regressions will include a vast amount of predictor variables. So, multiple regression analysis will be used in order to test all the formulated hypothesis. First of all, cultural regressions will be run that examine the effect of the cultural dimensions on the institutional determinants. These regressions include one of the five institutions as a dependent variable, and the four identified cultural

dimensions of Hofstede as predictor variables. Regressions will be run for every time period, implying that in order to measure the effect on one of the institutional determinants, a total of four regressions will be run. So, a total of twenty cultural regressions will be run, four for all five institutional determinants. Moreover, as is common in these types of cultural regressions, the GDP per capita will be included as a control variable (Bagchi et al., 2003).

After running these cultural regressions, which identified the determinants of the institutional characteristics of a country, several institutional regressions will be run. These institutional regressions try to reveal the determinants of both the share of permanent contracts and the flexibility of wages. The five institutional determinants and the three control variables will be included in this analysis as predictor variables. The share of permanent contracts and the flexibility of wages will be included as dependent variables. Again, regressions will be run for every time period, meaning that a total of eight institutional regressions will be run; four with the share of permanent contracts as a dependent variable, and four with the wage flexibility as a dependent variable.

Last, regressions will be run that incorporate all the relevant determinants and control variables in the analysis. So, in addition to the five institutional determinants and the three control variables, the four cultural determinants will also be included in the analysis. Again, four regressions, one for each time period, will be run with the flexibility of wages as the dependent variable. Four more regressions will be run that use the share of permanent contract as the dependent variable. So, another eight regressions including all the relevant determinants and control variables will be used in order to discover the determinants of labour market flexibility.

Using the exact same method for all the different regressions will be used in order to yield results that can easily be compared. For this analysis, this means that first, a regression with all the relevant determinants will be run. So, for example, the cultural regression including all four cultural variables and the control variable GDP per capita will be run. After looking at the regression table and the corresponding coefficients, the most insignificant variable will be dropped. Next, a 'new' regression will be run that excludes this most insignificant variable. Again, after looking at the regression table and the corresponding coefficients, the most insignificant variable is dropped. This will be done until the analysis only includes *significant* variables. So, for the cultural regressions, institutional regressions and the regressions that include all relevant variables this process will be used. This will most likely mean that the number of significant predictor variables will vary between the different regressions.

Moreover, in order to use multiple regression analysis, our dataset and the regressions itself need to meet various assumptions (Williams & Grajales & Kurkiewicz, 2013). A total of four assumptions have to be met, namely: (1) linear relationship between independent and dependent variable, (2) errors between the residuals should be normally distributed, (3) no multicollinearity in the dataset, (4) homoscedasticity. Moreover, highly skewed independent variables are transformed in

order to yield the best regression analysis results. Either log-transformation or square-transformation are used in order to transform the highly-skewed predictor variables (Field, 2009).

The first assumption can be checked with the use of scatterplots. Dots of the P-P plots of the 'regression standardized residuals' that are close to the regression line indicate a linear relationship. The second assumption can be checked with a goodness of fit test. Due to the relatively small sample size in this paper (n=33), the Shapiro-Wilk test is preferred over the Kolmogorov Smirnov test (Ahad et al., 2011). Due to the inclusion of multiple variables, the chances of violating the assumption with regard to multicollinearity is relatively big (Morrow-Howell, 1994). The problem of multicollinearity can be detected in two ways; (1) the VIF-scores for the variables can be checked, or, (2) by looking at the correlation matrixes. A VIF-score above ten indicates multicollinearity, while the general rule of thumb with regard to the correlation matrix is a correlation score above 0.8 (Williams, 2015). The assumption of homoscedasticity can be tested with the use scatterplots. The predicted standardized values of the model are plotted against the obtained standardised residuals in order to check this assumption. If there is no violation of this assumption the dots should follow a random array.

3.3 Types of Variables

The dependent variable varies in the cultural regressions. Every economic determinant will be included as a dependent variable four times; one time for every time period. Individualism (*IDV*), masculinity (*MAS*), uncertainty avoidance (*UAI*) and power distance (*PD*) will be included as predictor variables in these cultural regressions. The GDP per capita (*GDPCap*) will be included as a control variable.

Wage flexibility (*WageFlex*) and the share of permanent contracts (*PermanentContracts*) will be included as dependent variables in both the economic regressions as well as the regressions which include all the determinants. Corporatism (*Corporatism*), the power of trade unions (*TradeUnions*), the existence of minimum wages (*MiniWag*), unemployment benefits (*UnempBen*) and employment protection (*EmpPro*) are the relevant predictor variables for the economic regressions. The GDP per capita (*GDPCap*), the openness of the economy (*Roderick*) and the size of the agricultural sector (*Agri*) are incorporated as control variables.

The regressions including all the relevant determinants include both the institutional and cultural determinants, as well as all three control variables.

Chapter 4: Results

This chapter will provide all relevant output for the assumption testing as well as all the output for all the regressions. The results for the assumptions tests will be provided first. Secondly, the results from all the cultural regressions will be presented. Third, the relevant results for the institutional regressions will be provided. Fourth, the regressions including all relevant determinants and control variables and the corresponding results will be presented. Last, the robustness checks will be presented in order to increase the validity of the analysis.

4.1 Assumption Testing

A total of four assumptions have been tested, namely: (1) linear relationship between independent and dependent variable, (2) errors between the residuals should be normally distributed, (3) no multicollinearity in the dataset, (4) homoscedasticity. Moreover, highly skewed variables were transformed in order to yield the best regression analysis results.

First of all, the normality of the variables was checked with the use of the Shapiro-Wilkinson test. Significant values of this test indicated not normally distributed variables which had to be transformed in order to increase the validity and explanatory power of the analysis (Field, 2009). A total of three variables have been log-transformed this way, namely: corporatism (1991-1999; 2000-2006; 2007-2011; 2012-2013), agricultural variable (1991-1999; 2000-2006; 2007-2011; 2012-2013), GDP per Capita (2000-2006; 2007-2011; 2012-2013). Two other variables have been square-transformed to increase the validity of the regressions, namely: the power of trade unions (2000-2006; 2007-2011; 2012-2013), employment protection (2007-2011). Moreover, two scatterplots have been plotted before checking the other assumptions. One scatterplot plots the time in years and wage flexibility, while the other plots the wage flexibility with the time measured as the four time periods (1991-1999; 2000-2006; 2007-2011; 2012-2013). Figures 4. and 5. show these two scatterplots.

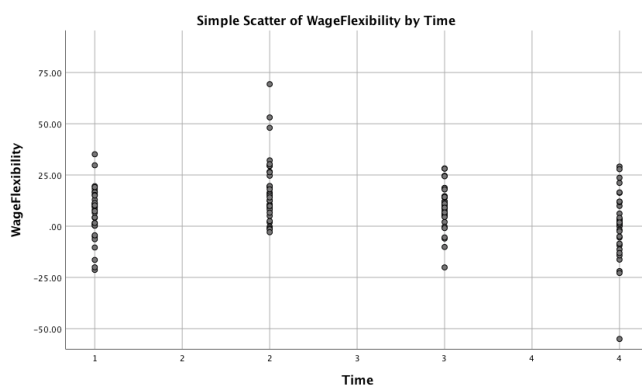


Figure 4. Wage Flexibility and time periods.

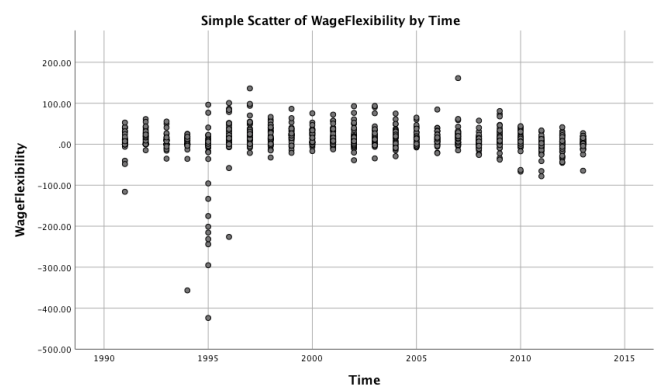


Figure 5. Wage Flexibility and time years.

One can observe a remarkable phenomenon in figure 5, as the spread of the flexibility of the wages is very big in the year 1995. The question arises, what happened in the year 1995? Did an overarching event took place which increased the flexibility of the wages in multiple countries? The increased flexibility of wages occurred in the following countries; Czech Republic, Estonia, Greece, Hungary, Israel, Mexico, Poland and Slovenia. One thing that can be discovered immediately is that all these countries are relatively 'poor' when compared to other OECD countries like the United States, Germany and the Netherlands. But, no overarching event can be discovered which could have caused the increased spread of the wage flexibility. Therefore, regressions for another 'time period' could be ran as a robustness check. This extra time period will consist of the 1991-1999 time period, excluding the year 1995. The results of these regressions can then be compared to the results of the 'ordinary' 1991-1999 period regressions, which included the year 1995.

Last, Cook's distance is used to determine whether influential data points are present in the dataset. A commonly used threshold is a value higher than one, which indicates an influential data point that should be omitted. In all the regressions, no Cook's distance exceeds the threshold of one. So, no influential points are present in our dataset. Now, the four previously described assumptions will be checked.

4.1.1 Linear Relationship

The assumption with regard to the linear relationship between the dependent variables and the independent variables was tested by looking at a normal P-P Plot of the regression of the standardized residuals and a scatterplot of both the regression of the standardized residuals and the regression of the standardized predicted values. This means that a total of eighty scatterplots have been examined this way, which due to restrictions cannot be included all. Therefore, two examples (figure 1 and 2 of the Appendix) of such scatterplots have been included. Both examples indicate a linear relationship between the dependent variable and the independent variables. The dots are more or less following the regression line in the first figure, indicating a linear relationship. This holds true for the other variables and regressions as well, indicating that the assumption of linearity is met.

4.1.2 Normal Distribution of Standard Errors

The second assumption states that the errors between the residuals should be normally distributed. This assumption can be checked in SPSS by estimating both the standardized and unstandardized residuals for the regressions. Next, the Shapiro-Wilk test is used to determine the distribution of the estimated standard errors. The Shapiro-Wilk tests the null hypothesis that the sample is normally distributed. This null-hypothesis can be accepted when the p-value is greater than the significance

level ($p > 0.05$), indicating that the standard errors are normally distributed. For the economic regressions for the time periods 1991-1999, 2000-2006, 2012-2013 and for the regressions including all determinants on wage flexibility for the time periods 2000-2006 and 2012-2013. The wage flexibility variables have been square-transformed so the errors were actually distributed normally. This worked for all the variables except for the 2000-2006 regression which included all the determinants. The Shapiro-Wilk tests corresponding the regressions are provided in table. 6, 7, 8 and 9 in the Appendix. All errors between the residuals are normally distributed, except for the errors of the regression on wage flexibility including all determinants for the time period 2000-2006. The non-normality of the residuals lowers the predictive power for this specific time period, as the amount of errors are not consistent across the range of the data. But, it is argued that regressions with non-normally distributed residuals still produce valid results, especially in the presence of at least ten observations per parameter (Schmidt & Finan, 2018). So, the assumption of the normal distribution of the errors is also met, except for the all determinants regression for the time period 2000-2006.

4.1.3 Multicollinearity

The assumption with regard to multicollinearity is tested by looking at the VIF-scores. A VIF-score above ten indicates multicollinearity (Williams, 2015). Table 10. in the Appendix provides an example of such VIF-scores for the time period 2012-2013. This example presents the corresponding VIF-scores between unemployment benefits and the other included variables in both the economic and all determinants regressions. The VIF-scores between power distance and the other variables included in the cultural regressions are also provided in this table. So, this table just shows three of the in total hundred VIF-score tables, which due to restrictions could not be included all. No VIF-score in any of the tables exceeded the threshold of ten, indicating that no multicollinearity is present between the variables.

4.1.4 Homoscedasticity

The assumption of homoscedasticity can be checked by looking at a scatterplot between the standardized residuals and the predicted values. An equal distribution of the points is desired, as this indicates homoscedasticity. For instance, patterns showing an increasing trend is something that should not be observed over here as this indicates heteroscedasticity. Figure 2. in the Appendix provides an example of such a scatterplot. Again, due to time restrictions just one example is provided. Figure 2. shows homoscedasticity, as the points are distributed fairly equally. The other regressions also show no clear evidence for heteroscedasticity. So, the last assumption is also met.

4.2 Cultural Regressions

In this section, the results of the cultural regressions will be discussed. The cultural regressions tested the possible effects of the four cultural dimensions of Hofstede (1984) on the five institutional determinants, namely; employment protection, unemployment benefits, the existence of minimum wages, the power of trade unions and corporatism. Moreover, the variable measuring the GDP per capita was also included as a control variable. For all five institutional determinants, four regression were run that all measure the different effects for one of the four time periods. So, a total of twenty regression are used to measure the effect of the cultural dimensions on these particular institutional determinants. The outcome of all the cultural regressions are provided in table 1. on page 33. The adjusted r-squared, the coefficients and the t-scores are all presented in this table.

4.2.1 Outcome Cultural Regression

Let's first have a look at the effect of power distance on the institutional determinants. Four significant, negative coefficients are discovered for the effect of power distance on the degree of corporatism for all four time periods. The negative relationship stays remarkably stable for all four time periods, as the difference between the coefficients is relatively small. Moreover, a positive, significant relationship is discovered for the effect of power distance on the existence of minimum wages. Again, this relationship stays remarkably stable for all four time periods. The discovered negative relationship between corporatism and power distance is partly in line with the formulated hypothesis 9a. However, another stable relationship between the existence of minimum wages and power distance was found, something that was not hypothesized. This is quite surprising, as the existence of minimum wages are actually narrowing the income inequality gap in a country. Contradictory, societies characterized by a high score on power distance typically have very uneven income gaps. So, hypothesis 9a can be partly accepted with regard to the relationship between power distance and corporatism.

In addition to this, a clear, significant, negative effect is also discovered for the effect of masculinity on employment protection. Again, the coefficients do not vary that much between the different time periods. Next, three negative coefficients were discovered for the effect of masculinity on the power of trade unions, although two of these coefficients were only significant at the 10%-level. Moreover, for the time period 2007-2011, no significant coefficient was discovered. Five negative relationship were expected between the degree of masculinity and the institutional determinants in hypothesis 6a. However, statistically significant evidence has only been discovered for the effect of masculinity on employment protection. This means that hypothesis 6a can be partly accepted.

Six highly significant coefficients were also discovered for the effect of uncertainty avoidance on the institutional determinants. Four significant, positive coefficients were discovered for the effect of uncertainty avoidance on employment protection. Again, the coefficients do not vary a lot, indicating another very stable relationship. Two highly significant coefficients for the first two time periods were discovered for the effect of uncertainty avoidance on the unemployment benefits. However, this effect fades when looking at the last two time periods. Last, one significant, positive coefficient was found for the relationship between uncertainty avoidance and the power of trade unions. A significant coefficient was only found for the first time period, indicating some, but weak evidence for a possible relationship between the two. The positive relationship between uncertainty avoidance and employment protection is actually in line with the formulated hypothesis 7a. However, the two negative coefficients measuring the effect of uncertainty avoidance and unemployment benefits are contradictory to that hypothesis. So, hypothesis 7a can be partly accepted with regard to the effect of uncertainty avoidance on employment protection.

No significant coefficients were discovered for the effect of individualism on one of the institutional determinants. Only one coefficient, although only significant at the 10%-level, was discovered for the effect of individualism on the power of trade unions. However, the significance of the coefficient was too low to draw any valid conclusions. This means that hypothesis 8a can be rejected, as no significant relationships between individualism and the institutional determinants were found.

Last, four positive coefficients were discovered measuring the effect of the control variable GDP per capita on the power of the trade unions. This indicates that 'richer' countries experience more powerful trade unions, which does not come as a surprise. In addition, one positive coefficient for the last time period was found for the effect of the GDP per capita on the unemployment benefits, although this relationship was not as stable as most of the other discovered relationships. The adjusted r-squared ranges between 0.198 and 0.456, indicating a decent overall fit.

	<i>n</i>	<i>Adj</i> <i>r</i> ²	<i>IDV</i>	<i>UAI</i>	<i>PDI</i>	<i>MAS</i>	<i>GDPCap</i>
Corp (1991-1999)	33	0.320			-0.529 (-3.627)***		
Corp (2000-2006)	33	0.164			-0.436 (-2.698)**		
Corp (2007-2011)	33	0.215			-0.490 (-3.129)***		
Corp (2012-2013)	33	0.250			-0.523 (-3.418)***		
Emp (1991-1999)	33	0.456		0.608 (4.547)***		-0.509 (-3.804)***	
Emp (2000-2006)	33	0.328		0.531 (3.628)***		-0.381 (-2.600)**	
Emp (2007-2011)	33	0.275		0.499 (3.285)***		-0.347 (-2.280)**	
Emp (2012-2013)	33	0.351		0.462 (3.211)***		-0.492 (-3.423)***	
Unemp (1991-1999)	33	0.245		-0.518 (-3.375)***			
Unemp (2000-2006)	33	0.187		-0.461 (-2.890)***			
Unemp (2007-2011)	33	0.281		-0.319 (-1.871)*			0.346 (2.035)*
Unemp (2012-2013)	33	0.237					0.510 (3.305)***
Trade (1991-1999)	33	0.293	0.408 (1.751)*	0.531 (2.353)**		-0.544 (-3.213)***	0.362 (2.090)**
Trade (2000-2006)	33	0.275				-0.273 (-1.792)*	0.456 (2.990)***
Trade (2007-2011)	33	0.145					0.415 (2.536)**
Trade (2012-2013)	33	0.257				-0.285 (-1.853)*	0.432 (2.809)***
MinWag (1991-1999)	33	0.394			0.643 (4.670)***		
MinWag (2000-2006)	33	0.198			0.472 (2.983)***		
MinWag (2007-2011)	33	0.198			0.472 (2.983)***		
MinWag (2012-2013)	33	0.198			0.472 (2.983)***		

Table 1. Outcome Cultural Regressions. (* = significant at 10%-level, ** = significant at 5%-level, *** = significant at 1%-level.

4.2.2 Interpretation

The results indicate some very strong, stable relationships between the cultural dimensions and the institutional determinants. This means that corporatism is strongly defined by the degree of power distance in a country, indicating that an increase on the power distance score actually lowers the degree of corporatism within a country. Employment protection is strongly defined by both uncertainty avoidance as well as masculinity. However, an increase on the uncertainty avoidance score increases the employment protection, while an increase on the masculinity score decreases the amount of employment protection. Moreover, there is some evidence present that a higher score on the uncertainty avoidance dimension lowers the unemployment benefits. This seems quite surprising, as more unemployment benefits actually lowers the degree of uncertainty. So, a positive

coefficient was actually expected here, something which was also hypothesized. The power of trade unions is closely related to the GDP per capita of a country. The 'richer' countries are typically characterized by strong, influential trade unions. Last, the existence of minimum wages is strongly defined by the degree of power distance in a country. An increase on the power distance dimension also increases the existence of minimum wages, which again, is quite contradictory when compared to the wealth inequality characteristic of countries that score high on the power distance score.

All in all, the relationships between the cultural determinants and institutional determinants are remarkably stable over the years, especially when looking at the coefficients. It is remarkable to see that the cultural regressions discovered such stable and strong relationships with the institutional determinants. This implies that the institutional characteristics of a country are strongly defined by the cultural characteristics of the society. So, country-specific cultural characteristics cannot be ignored when setting up the institutional characteristics of a country. Laws and rules with regard to the flexibility of labour markets can only be constituted when that particular country has certain cultural characteristics. For instance, laws with regard to employment protection cannot be constituted by governments of very masculine societies as easily as very feminine countries. Due to the masculine cultural values of that country, laws and rules with regard to supporting the weaker people in society are not accepted as easily as would be the case in a feminine country.

4.3 Institutional Regressions

In this section, the results of the institutional regressions will be discussed. The institutional regressions tested the possible effects of the five institutional determinants and the control variables on both the share of permanent contracts as well as on the wage flexibility. For the share of permanent contracts and wage flexibility, four regressions were run that all measure the different effects for one of the four time periods. So, a total of eight regressions are used to measure the effect of the institutional dimensions on the two indicators of labour market flexibility. The outcome of all the institutional regressions are provided in table 2. The adjusted r-squared, the coefficients and the t-scores are all presented in this table.

4.3.1 Outcome Institutional Regressions

The coefficients for the institutional regressions on the two indicators of labour market flexibility did not provide such clear evidence as the previous cultural regressions. Only five significant coefficients have been discovered for effect of the institutional variables and its control variables on the share of permanent contracts. A significant, negative coefficient was discovered for the effect of employment protection on the share of permanent contracts for the last time period. This indicates that, after the

crisis, an increase in the employment protection would actually lower the share of permanent contracts, something which was also expected by hypothesis 1. Moreover, two positive coefficients for the first and last time period were discovered measuring the effect of the GDP per capita on the share of permanent contracts. This implies that 'richer' countries experience more permanent contracts. Last, two negative coefficients were found for the agricultural variable for the second and third time period, indicating that a more sizeable agricultural sector is accompanied by less permanent contracts. However, evidence from other authors actually suggested that more temporary contracts are present in the agricultural sector (OECD, 2002). The adjusted r-squared ranged between 0.205 and 0.287, indicating a decent overall fit.

In addition, the significance of only one variable measuring the effect of the institutional determinants and its control variables on the flexibility of the wages was good enough in order to test the formulated hypothesis. Some coefficients were significant at the 10%-level, but this is too low in order to validly make any statements. The only significant coefficient was discovered for the control variable measuring the openness of the Economy (*Rodrik*). A significant, positive coefficient was only found for the third time period, indicating that more open economies experienced more wage flexibility during the most recent financial crisis. So, as only one significant coefficient (excluding control variables) has been discovered, four hypotheses can be rejected immediately. Hypotheses 2 to 5 can be rejected, as no empirical evidence has been found. One significant, negative coefficient was found measuring the effect of employment protection on the share of permanent employment. This was also expected by the formulated hypothesis 1, meaning it can be partly accepted. However, as the evidence is only present for one time period, this relationship is not as stable as the previously discovered cultural relationships. The adjusted r-squared ranged between 0.022 and 0.388, indicating that the model did not fit the data. This is most likely due to the fact that these institutional characteristics do not determine the flexibility of the labour market.

	<i>n</i>	<i>Adj r²</i>	<i>MinWag</i>	<i>UnempBen</i>	<i>EmpPro</i>	<i>Corp</i>	<i>TradeUnions</i>	<i>GDPPerCap</i>	<i>Roderick</i>	<i>Agri</i>
PermanentContracts (1991-1999)	33	0.214						0.489 (3.120)***		
PermanentContracts (2000-2006)	33	0.205								-0.480 (-3.043)***
PermanentContracts (2007-2011)	33	0.240								-0.514 (-3.332)***
PermanentContracts (2012-2013)	33	0.287			-0.400 (-2.612)**			0.333 (2.171)**		
WageFlex (1991-1999)	33	0.087			-0.341 (-2.016)*					
WageFlex (2000-2006)	33	0.022						-0.229 (-1.308)*		
WageFlex (2007-2011)	33	0.164				-0.343 (-1.979)*			0.461 (2.660)**	
WageFlex (2012-2013)	33	0.081				0.333 (1.791)*		-0.406 (-2.183)*		

Table 2. Regression Output for Institutional Regressions

4.3.2 Interpretation

The results of the institutional regression were quite surprising, as no stable relationship between one of the institutional determinants and the indicators of labour market flexibility has been discovered. More stable coefficients and corresponding relationships were hypothesized for the institutional determinants, but no relationships have actually been found. Moreover, as just found out, the institutional characteristics of a country do not determine the flexibility of the labour market. Last, the regressions including all the determinants and control variables remain. As just discovered, the institutional characteristics do not play an important role in determining the flexibility of the labour market, so what does? What remains are the cultural determinants. It could be the case that the cultural determinants actually have a direct effect on the labour market flexibility instead of the hypothesized indirect effect. This will be discussed in the next section.

4.4 Regressions Including All Determinants

In this section, the results of the regressions which include all the determinants will be discussed. These regressions test which determinants influence the flexibility of the labour market; do the cultural or institutional determinants play a more important role in assessing the flexibility of the labour markets? Moreover, the three control variables are also included in the analysis. For both the share of permanent contracts and wage flexibility, four regressions were run that all measure the different effects for every time period. So, a total of eight regressions were used to determine the effect of all the determinants on either the share of permanent contracts or wage flexibility. The outcome of these eight regressions are provided in table 3. The adjusted r-squared, the coefficients and the t-scores are all presented in this table.

4.4.1 Outcome Regressions

Again, the regressions did not provide the best results with regard to the institutional determinants. Only one significant coefficient at either the 1%-level or 5%-level has been discovered measuring the effect of corporatism on the share of permanent contracts. This positive coefficient was only significant for the second time period. A positive relationship was also expected by hypothesis 5. Moreover, a positive, significant coefficient was discovered for the control variable GDP per capita for the last time period. This implies that 'richer' countries are typically associated with more permanent contracts. The cultural determinants provide a better explanation for the share of permanent contracts, as individualism, masculinity and uncertainty avoidance all provide significant coefficients. Two significant, positive coefficients for the effect of individualism on the share of permanent contracts are discovered. No significant relationship was actually hypothesized between

the two, meaning hypothesis 8b can be partly rejected. Moreover, two significant, negative coefficients have been found for the last two time periods for the effect of uncertainty avoidance on the share of permanent contracts. This negative relationship was also expected by hypothesis 7b. So, hypothesis 7b can be partly accepted. Last, three significant, positive coefficients were discovered for masculinity, indicating a positive relationship between masculinity and the share of permanent contracts. This was also expected by hypothesis 6b, so, it can be partly accepted. The adjusted r-squared ranges between 0.335 and 0.444, indicating a decent fit.

Next, the determinants of the flexibility of the wages will be discussed. Again, the institutional characteristics did not play an important role in determining the flexibility of the wages. A significant, negative coefficient was discovered for the effect of GDP per capita on the flexibility of wages, implying that 'richer' countries experience less wage flexibility. Moreover, the openness of the economy (*Roderick*) yielded a significant, positive coefficient for the third time period. Again, the cultural dimensions did a better job at determining the flexibility of the wages. Three significant, negative coefficients were discovered for the first three time periods for the effect of uncertainty avoidance on wage flexibility. Again, the coefficients were remarkably steady, as deviation between the time periods was minimal. This negative relationship was also expected by hypothesis 7b, meaning it can be partly accepted. Another negative coefficient was discovered for the masculinity variable for the third time period. This negative coefficient is contradictory to hypothesis 6b, which expected a positive relationship between masculinity and the flexibility of the wages. So, hypothesis 6b can be partly rejected. Last, a positive coefficient was discovered for the effect of power distance. This was also expected by hypothesis 9b, meaning it can be partly accepted. The adjusted r-squared ranged between 0.098 and 0.388. However, the adjusted r-squared for the regressions for the first time period equalled 0.098. As mentioned earlier, the spread of the wage flexibility was very big in the year 1995. This could be an explanation as to why the adjusted r-squared is so remarkably low, but this is something that will be discussed and examined later on as a robustness check.

	<i>n</i>	<i>Adj. r²</i>	<i>MinWag.</i>	<i>Unemp.</i>	<i>EmpPro.</i>	<i>Corp.</i>	<i>Trade.</i>	<i>GDPGCap.</i>	<i>Rod.</i>	<i>Agri.</i>	<i>IDV.</i>	<i>UAI.</i>	<i>MAS.</i>	<i>PD.</i>
Permanent (1991-1999)	33	0.444				0.291 (1.991)*		0.262 (1.713)*			0.347 (2.175)**		0.290 (2.026)*	
Permanent (2000-2006)	33	0.443				0.302 (2.110)**					0.489 (3.540)***		0.341 (2.431)**	
Permanent (2007-2011)	33	0.335										-0.521 (-3.577)***	0.405 (2.780)***	
Permanent (2012-2013)	33	0.359						0.369 (2.178)**	-0.274 (-1.805)*			-0.364 (-2.134)**	0.377 (2.630)**	
WageFlex (1991-1999)	33	0.098										-0.355 (-2.114)**		
WageFlex (2000-2006)	33	0.150						-0.466 (-2.550)**				-0.383 (-2.098)**		
WageFlex (2007-2011)	33	0.388				-0.323 (-1.985)*			0.432 (2.714)**			-0.470 (-2.791)***	-0.310 (-2.170)**	0.454 (2.472)**
WageFlex (2012-2013)	33	0.135	-0.424 (2.003)*		-0.447 (-1.856)*			-3.57 (-1.733)*				0.445 (1.903)*	-0.394 (-1.975)*	

Table 3. Regression Output for All Determinants

4.4.2 Interpretation

So, what do these results actually mean? First of all, it is remarkable to see how steady the coefficients of the cultural dimensions are, and how labile the coefficients for the institutional determinants are. It was hypothesized that the four cultural dimensions would have some sort of influence on the five institutional determinants, and that these institutional determinants would then have a certain effect on either wage flexibility or the share of permanent contracts. However, this indirect effect of the cultural determinants on the indicators of labour market flexibility was not discovered, as the institutional determinants had almost no significant effect on the indicators of labour market flexibility. Instead, the analysis discovered that the cultural dimensions had a direct effect on both the flexibility of wages as well as on the share of permanent contracts. So, the stable coefficients of the cultural determinants were quite remarkable, as an indirect effect was expected. The fact that almost no significant coefficient for the institutional determinants was discovered is also noteworthy. This actually means that all these determinants, unemployment benefits, corporatism, minimum wages etc., have almost no influence on the flexibility of the labour markets. But, the cultural dimensions itself did have a big impact on these institutional determinants. All cultural dimensions, except the degree of individualism, had a significant impact on at least one of the five institutional characteristics. So, the cultural dimensions had a direct effect on both the institutional determinants as well as on the flexibility of the labour market itself.

So, all these formal laws and rules which government use in order to increase the flexibility of the labour market, are almost neglectable as the country-specific cultural characteristics have a bigger influence on this process. institutions, like culture, seem to be way more important when looking at the results from the analysis. The importance of the cultural dimensions is also illustrated by the fact that the degree of individualism had no effect on any of the five institutional determinants, but actually had a direct effect on the share of permanent contracts.

These last regressions, including all the relevant determinants and control variables, marked the importance of the cultural dimensions. It showed that it might be hard for governments to increase the flexibility of their labour market, as the country-specific cultural characteristics play such an important role in this process. Formal institutions, like the institutional determinants, are relatively easy to change due to laws and rules. On the contrary, culture, is very hard to change and it can take years, decades and maybe even centuries to change certain cultural characteristics of a country. So, even though the European Union advises to increase the flexibility of the labour markets (European Commission, 2018), it might not be that easy for all countries as the country-specific cultural characteristics play such an important role.

For instance, the results from the regression analysis clearly indicate that it might be hard for individualistic and masculine countries to increase their labour market flexibility through the mobility

of labour. On the contrary, countries characterized by a high degree of uncertainty avoidance and more feminine countries might find it easier to increase the mobility of labour, and thus their labour market flexibility. Moreover, it might be hard for countries characterized by a high degree of uncertainty avoidance to increase the flexibility of the wages. Concluding, country-specific cultural characteristics should be taken into consideration when trying to improve the flexibility of the labour market. These cultural characteristics can be considered more important than the institutional characteristics of a country.

4.5 Robustness Check

In this section, a robustness check will be carried out for which the same regressions on wage flexibility will be run. The time period 1991-1999 will be used, but the year 1995 will be excluded as the spread of the wage flexibility increased heavily that year. All assumptions for the multiple regression analysis are met.

4.5.1 Institutional Regressions

Table 4. presents the outcome of the economic regressions on wage flexibility without the year 1995. As there is just one time period included in this analysis, the irrelevant variables are left out for simplicity. So, only statistically significant variables are included in table 4. Surprisingly, both the economic regressions as well as the regressions including all determinants yield exactly the same results. This means that the cultural determinants do not play any role in the flexibility of the wages for the time period 1991-1999. As the most insignificant variable is dropped every time until only significant variables remain, exactly the same variables, with the same values, remain in the analysis. The economic regression output for the year 1995 only produced the employment protection as a significant value. The regression with all the determinants included only the uncertainty avoidance as a significant coefficient. Moreover, the adjusted r-squared increased from both 0.087 and 0.098 to 0.304 for both regressions. So, excluding the year 1995 from the analysis improved the model significantly. More significant values are discovered with this specific regression.

	<i>n</i>	<i>Adj</i> <i>r</i> ²	<i>UnempBen</i>	<i>EmpPro</i>	<i>Roderick</i>	<i>Agri</i>
Wage Flexibility	33	0.304	0.452 (2.157)**	-0.350 (-2.028)*	-0.446 (-2.168)**	0.428 (2.219)**
Wage Flexibility	33	0.304	0.452 (2.157)**	-0.350 (-2.028)*	-0.446 (-2.168)**	0.428 (2.219)**

Table 4. Regression Output for Robustness Check.

It was hypothesized that the unemployment benefits are positively related to the flexibility of wages, which is also shown in the regression output of table 4. So, hypothesis 2 can be partly accepted for the first time period. No significant relationship was hypothesized between the employment protection and wage flexibility. However, table 4. shows a negative relationship between employment and wage flexibility, but these coefficients are only significant at the 10%-level. So, the empirical evidence for the time period 1991-1999 is too weak due to the significance level. Moreover, a negative coefficient can be found for openness of an economy, which stands contrary to the discovered positive coefficients for the time period 2007-2011. Last, a positive coefficient is estimated for the agricultural variable, something which was not estimated for other time periods.

Moreover, either a positive or a negative relationship was hypothesized for the variables existence of minimum wages, power of trade unions, corporatism, masculinity, uncertainty avoidance, individualism and power distance. As no empirical evidence is found for these variables, the hypotheses 3, 4, 5, 6, 7, 8 and 9 have to be partly rejected for this time period. In addition, no significant relationship was expected in hypothesis 1. As no significant empirical evidence is discovered, hypothesis 1 can be partly accepted with regard to wage flexibility. Concluding, the model fits the data better when excluding the year 1995 from the analysis. More significant coefficients were found, as well as an increasing adjusted r-squared. But, the effect of uncertainty avoidance fades away when excluding the year 1995 from the analysis.

Chapter 5: Discussion

Even though it is tried to reduce all possible limitations as far as possible, some limitations with regard to this paper are still present. The first limitation regards the measurement of wage flexibility. As mentioned before, a better measurement for wage flexibility is present in the form of nominal wage rigidity. However, the calculation of the nominal wage rigidity is hard and time-consuming. This is also indicated by the fact that various studies that only calculate the nominal wage rigidity are present (Wulfsberg, 2008; Smith, 2000). Unfortunately, these studies only calculated the nominal wage rigidity for different time periods and not for all the relevant OECD countries. So, the calculated nominal wage rigidities from these studies could not be used in this analysis.

Moreover, not all OECD countries have been included in the dataset, as almost no data was available for the recently joined countries Latvia and Lithuania. In addition, no data with regard to the Hofstede dimensions was available, resulting in the exclusion of Iceland in the dataset. The results could have been generalised better for all OECD countries if these countries were included, unfortunately, this choice could not be made. Moreover, the adjusted r-squared for the institutional regressions on wage flexibility remained fairly low. It could well be the case that more variables affecting the flexibility of wages should have been included. There are maybe a dozen of variables affecting the flexibility of wages, which unfortunately, cannot be included all. Beforehand, it could not be easily determined which variable would have the biggest influence on the flexibility of the wages. Moreover, the results are still lagging six years behind, as the data was only available till the year 2013. It would have been better if the results could be generalized up to a year more closely to the present time. Especially, because the financial crisis changed various economic determinants, which might have changed with a lag due to political stakes.

Last, the increasing spread for the year 1995 remains questionable as an overarching argument why this spread increased in specifically that year cannot be found. However, some countries had political elections in the year 1995, which could have led to significant changes. But the exclusion of the year 1995 as a robustness check did significantly change the results. Better results were discovered, so, some sort of treatment has been implicated for this particular problem.

Chapter 6: Conclusion

Multiple regressions analysis is used in order to estimate both the cultural determinants as well as the institutional determinants of labour market flexibility for thirty-three OECD countries. This labour market flexibility was measured by two indicators; the share of permanent contracts and the wage flexibility, that was measured as the variation in real wages. Four time periods were identified in order to estimate the effect; 1991-1999, 2000-2006, 2007-2011 and 2012-2013. Four cultural determinants were identified that could possibly directly influence the institutional determinants. Moreover, indirect effects of these cultural determinants on the indicators of labour market flexibility were also hypothesized. These cultural determinants were based on the four cultural dimensions of Hofstede (1984), namely: (1) masculinity-femininity, (2) individualism-collectivism, (3) uncertainty avoidance and (4) power distance. Moreover, five institutional determinants were identified that could possibly have an impact on the labour market flexibility: (1) unemployment benefits, (2) employment protection, (3) the power of trade unions, (4) corporatism and (5) the existence of minimum wages. Three control variables were added as control variables, namely: (1) GDP per capita, (2) openness of the economy (Rodrik, 1998) and (3) size of the agricultural sector. A total of thirty-six regressions were used in order to estimate the determinants of labour market flexibility; twenty cultural regressions, eight economic regressions and eight regressions including all the variables.

First of all, the cultural regressions revealed some strong, stable relationships. Strong and stable negative relationships were discovered between power distance and corporatism, masculinity and employment protection and between uncertainty avoidance and unemployment benefits. The latter relationship is quite surprising, as a positive relationship between the two was actually hypothesized. Moreover, positive relationships were discovered between uncertainty avoidance and employment protection, GDP per capita and the power of trade unions and between power distance and the existence of minimum wages. Again, the latter relationship was quite surprising, as the existence of a minimum wages actually narrows the inequality gap within society. This is not in line with the characteristic of society associated with a high power distance score, which are typically characterized by an uneven income distribution.

The institutional regressions did not yield such strong and stable relationships as the cultural regressions. Actually, no stable relationship between one of the institutional determinants and the indicators of labour market flexibility were discovered. This implies that the institutional characteristics of a country do not determine the flexibility of the labour market. The regressions including all the relevant determinants revealed better results than the institutional regressions, while again, no significant stable relationships were discovered between the institutional

determinants and the indicators of labour market flexibility. Significant, positive relationships were actually discovered between individualism and masculinity and the share of permanent contracts. Moreover, a significant, negative relationship was revealed between the degree of uncertainty avoidance and the share of permanent contracts. Another very stable, negative relationship was discovered between uncertainty avoidance and flexibility of wages.

The regression results indicate that the country-specific cultural characteristics are very important in the determination process of certain institutional characteristics. For instance, countries characterized by a high degree of uncertainty avoidance, typically have strong employment protection. So, it might be hard for societies which are associated with low uncertainty avoidance to enforce rules which imply strong employment protection, as their inhabitants do not feel the necessity for these formal rules. So, country-specific cultural characteristics cannot be ignored when setting up the institutional characteristics of a country. Certain laws and rules with regard to the flexibility of labour markets can only be constituted when that particular country has certain cultural characteristics. Moreover, the regression results revealed that the institutional determinants have almost no influence on the flexibility of the labour market. However, the cultural dimensions do influence this process heavily. Individualism and masculinity are negatively related to the flexibility of the labour markets, while uncertainty avoidance is positively related to the labour market flexibility through the mobility of labour. On the contrary, uncertainty avoidance is negatively related to the flexibility of the labour market through the flexibility of wages.

When comparing the results with previous studies, like for instance, Black (1999; 2001), the same inverse relationships between masculinity and both employment protection as well as the collective bargaining coverage are discovered. Moreover, uncertainty avoidance is still positively related to employment protection, while new evidence is discovered for relationships between power distance and both corporatism and the existence of minimum wages. Just as hypothesized by Black (1999; 2001), no correlations were discovered between individualism and the institutional determinants.

So, all these formal laws and rules which government use in order to increase the flexibility of the labour market, are almost neglectable as the country-specific cultural characteristics are more important in this process. This means that the hypothesized indirect effect of the cultural determinants is not found, but there is actually a direct effect present between the cultural determinants and the labour market flexibility. Informal institutions, like culture, seem to be way more important when looking at the results from the analysis. The importance of the cultural dimensions is also illustrated by the fact that the degree of individualism had no effect on any of the five institutional determinants, but actually had a direct effect on the share of permanent contracts. It might be hard for governments to increase the flexibility of their labour market, as the country-

specific cultural characteristics play such an important role in this process. Formal institutions, like the institutional determinants, are relatively easy to change due to laws and rules. On the contrary, culture, is very hard to change and it can take years, decades and maybe even centuries to change certain cultural characteristics of a country. So, even though the European Union advises to increase the flexibility of the labour markets (European Commission, 2018), it might not be that easy for all countries as the country-specific cultural characteristics play such an important role.

For instance, the results from the regression analysis clearly indicate that it might be hard for individualistic and masculine countries to increase their labour market flexibility through the mobility of labour. On the contrary, countries characterized by a high degree of uncertainty avoidance and more feminine countries might find it easier to increase their mobility of labour, and thus their labour market flexibility. Moreover, it might be hard for countries that are characterized by a high degree of uncertainty avoidance to increase their flexibility of wages. Concluding, country-specific cultural characteristics should be taken into consideration when trying to improve the flexibility of the labour market. These cultural characteristics can be considered more important than the institutional characteristics of a country.

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Appendix

Femininity	Masculinity
Minimum emotional and social role differentiation between the genders	Maximum emotional and social role differentiation between the genders
Men and women should be modest and caring	Men should be and women may be assertive and ambitious
Balance between family and work	Work prevails over family
Sympathy for the weak	Admiration for the strong
Both fathers and mothers deal with facts and feelings	Fathers deal with facts, mothers with feelings
Both boys and girls may cry but neither should fight	Girls cry, boys don't; boys should fight back, girls shouldn't fight
Mothers decide on number of children	Fathers decide on family size
Many women in elected political positions	Few women in elected political positions
Religion focuses on fellow human beings	Religion focuses on God or gods
Matter-of-fact attitudes about sexuality; sex is a way of relating	Moralistic attitudes about sexuality; sex is a way of performing

Table 1. Ten identified differences between Feminine and Masculine societies from Hofstede (2011).

Weak Uncertainty Avoidance	Strong Uncertainty Avoidance
The uncertainty inherent in life is accepted and each day is taken as it comes	The uncertainty inherent in life is felt as a continuous threat that must be fought
Ease, lower stress, self-control, low anxiety	Higher stress, emotionality, anxiety, neuroticism
Higher scores on subjective health and well-being	Lower scores on subjective health and well-being
Tolerance of deviant persons and ideas: what is different is curious	Intolerance of deviant persons and ideas: what is different is dangerous
Comfortable with ambiguity and chaos	Need for clarity and structure
Teachers may say 'I don't know'	Teachers supposed to have all the answers
Changing jobs, no problem	Staying in jobs even if disliked
Dislike of rules - written or unwritten	Emotional need for rules – even if not obeyed
In politics, citizens feel and are seen as competent towards authorities	In politics, citizens feel and are seen as incompetent towards authorities
In religion, philosophy and science: relativism and empiricism	In religion, philosophy and science: belief in ultimate truths and grand theories

Table 2. Ten identified differences between societies characterized by high and weak Uncertainty Avoidance.

Individualism	Collectivism
Everyone is supposed to take care of him- or herself and his or her immediate family only	People are born into extended families or clans which protect them in exchange for loyalty
"I" – consciousness	"We" –consciousness
Right of privacy	Stress on belonging
Speaking one's mind is healthy	Harmony should always be maintained
Others classified as individuals	Others classified as in-group or out-group
Personal opinion expected: one person one vote	Opinions and votes predetermined by in-group
Transgression of norms leads to guilt feelings	Transgression of norms leads to shame feelings
Languages in which the word "I" is indispensable	Languages in which the word "I" is avoided
Purpose of education is learning how to learn	Purpose of education is learning how to do
Task prevails over relationship	Relationship prevails over task

Table 3. Ten identified differences between Individualistic and Collectivistic societies by Hofstede (2011).

Small Power Distance	Large Power Distance
Use of power should be legitimate and is subject to criteria of good and evil	Power is a basic fact of society antedating good or evil: its legitimacy is irrelevant
Parents treat children as equals	Parents teach children obedience
Older people are neither respected nor feared	Older people are both respected and feared
Student-centred education	Teacher-centred education
Hierarchy means inequality of roles, established for convenience	Hierarchy means existential inequality
Subordinates expect to be consulted	Subordinates expect to be told what to do
Pluralist governments based on majority vote and changed peacefully	Autocratic governments based on co-optation and changed by revolution
Corruption rare; scandals end political careers	Corruption frequent; scandals are covered up
Income distribution in society rather even	Income distribution in society very uneven
Religions stressing equality of believers	Religions with a hierarchy of priests

Table 4. Ten identified differences between societies characterized by small and large power distance (Hofstede 2011).

Country	Power Distance	Individualism-Collectivism	Masculinity-Femininity	Uncertainty Avoidance
Australia	38	90	61	51
Austria	11	55	79	70
Belgium	65	75	54	94
Canada	39	80	52	48
Chile	63	23	28	86
Czech Republic	57	58	57	74
Denmark	18	74	16	23
Estonia	40	60	30	60
Finland	33	63	26	59
France	68	71	43	86
Germany	35	67	66	65
Greece	60	35	57	112
Hungary	46	80	88	82
Ireland	28	70	68	35
Israel	13	54	47	81
Italy	50	76	70	75
Japan	54	46	95	92
Korea	60	18	39	85
Luxembourg	40	60	50	70
Mexico	81	30	69	82
Netherlands	38	80	14	53
New Zealand	22	79	58	49
Norway	31	69	8	50
Poland	68	60	64	93
Portugal	63	27	31	104
Slovak Republic	104	52	110	51
Slovenia	71	27	19	88
Spain	57	51	42	86
Sweden	31	71	5	29
Switzerland	34	68	70	58
Turkey	66	37	45	85
United Kingdom	35	89	66	35
United States	40	91	62	46

Table 5. Cultural Dimensions Scores from Hofstede.

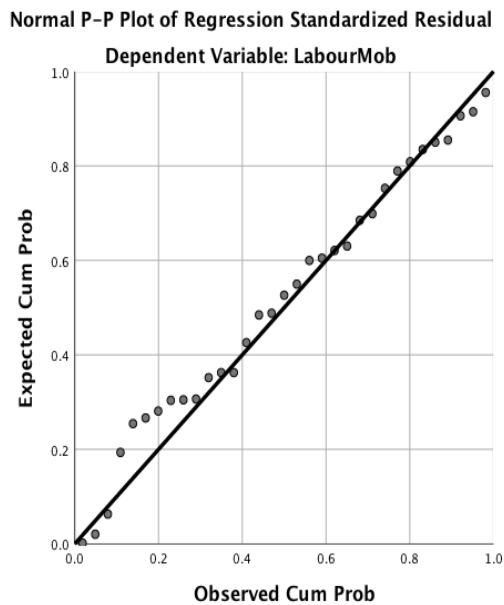


Figure 1. Normal P-P Plot of Regression Standardized Residual.

Regression	Shapiro-Wilkinson
<i>Cultural Regression (Corporatism)</i>	0.597
<i>Cultural Regression (EmpPro)</i>	0.423
<i>Cultural Regression (UnempBen)</i>	0.078
<i>Cultural Regression (MiniWag)</i>	0.849
<i>Cultural Regression (TradeUnions)</i>	0.208
<i>Economic Regression (LabourMob)</i>	0.130
<i>Economic Regression (WageFlex)</i>	0.968
<i>All Determinants Regression (LabourMob)</i>	0.095
<i>All Determinants Regression (WageFlex)</i>	0.132

Table 6. Shapiro-Wilk test for time period (1991-1999).

Regression	Shapiro-Wilkinson
<i>Cultural Regression (Corporatism)</i>	0.845
<i>Cultural Regression (EmpPro)</i>	0.153
<i>Cultural Regression (UnempBen)</i>	0.208
<i>Cultural Regression (MiniWag)</i>	0.167
<i>Cultural Regression (TradeUnions)</i>	0.959
<i>Economic Regression (LabourMob)</i>	0.102
<i>Economic Regression (WageFlex)</i>	0.934
<i>All Determinants Regression (LabourMob)</i>	0.200
<i>All Determinants Regression (WageFlex)</i>	0.002

Table 7. Shapiro-Wilk test for time period (2000-2006).

Regression	Shapiro-Wilkinson
<i>Cultural Regression (Corporatism)</i>	0.138
<i>Cultural Regression (EmpPro)</i>	0.221
<i>Cultural Regression (UnempBen)</i>	0.063

<i>Cultural Regression (MiniWag)</i>	<i>0.210</i>
<i>Cultural Regression (TradeUnions)</i>	<i>0.280</i>
<i>Economic Regression (LabourMob)</i>	<i>0.828</i>
<i>Economic Regression (WageFlex)</i>	<i>0.793</i>
<i>All Determinants Regression (LabourMob)</i>	<i>0.824</i>
<i>All Determinants Regression (WageFlex)</i>	<i>0.615</i>

Table 8. Shapiro-Wilk test for time period (2007-2011).

Regression	Shapiro-Wilkinson
<i>Cultural Regression (Corporatism)</i>	<i>0.965</i>
<i>Cultural Regression (EmpPro)</i>	<i>0.237</i>
<i>Cultural Regression (UnempBen)</i>	<i>0.984</i>
<i>Cultural Regression (MiniWag)</i>	<i>0.097</i>
<i>Cultural Regression (TradeUnions)</i>	<i>0.882</i>
<i>Economic Regression (LabourMob)</i>	<i>0.853</i>
<i>Economic Regression (WageFlex)</i>	<i>0.348</i>
<i>All Determinants Regression (LabourMob)</i>	<i>0.863</i>
<i>All Determinants Regression (WageFlex)</i>	<i>0.917</i>

Table 9. Shapiro-Wilk test for time period (2012-2013).

All Determinants (UnempBen)	VIF-score	Economic Regression (UnempBen)	VIF-score	Cultural Regression (PD)	VIF-score
Agricultural	2.717	Agricultural	2.169	Masculinity	1.144
Corporatism	2.109	Corporatism	1.750	Uncertainty Avoidance	1.974
Employment Protection	3.759	Employment Protection	2.245	Individualism	2.182
GDP Cap	2.711	GDP Cap	2.477	GDP Cap	1.618
Minimum Wages	2.480	Minimum Wages	1.716		
Roderick	1.600	Roderick	1.228		
Trade Unions	3.457	Trade Unions	2.724		
Masculinity	2.008				
Uncertainty Avoidance	3.117				
Individualism	3.476				
Power Distance	3.476				

Table 10. Example VIF-scores for (Unemployment Benefits and Power Distance, 2012-2013).

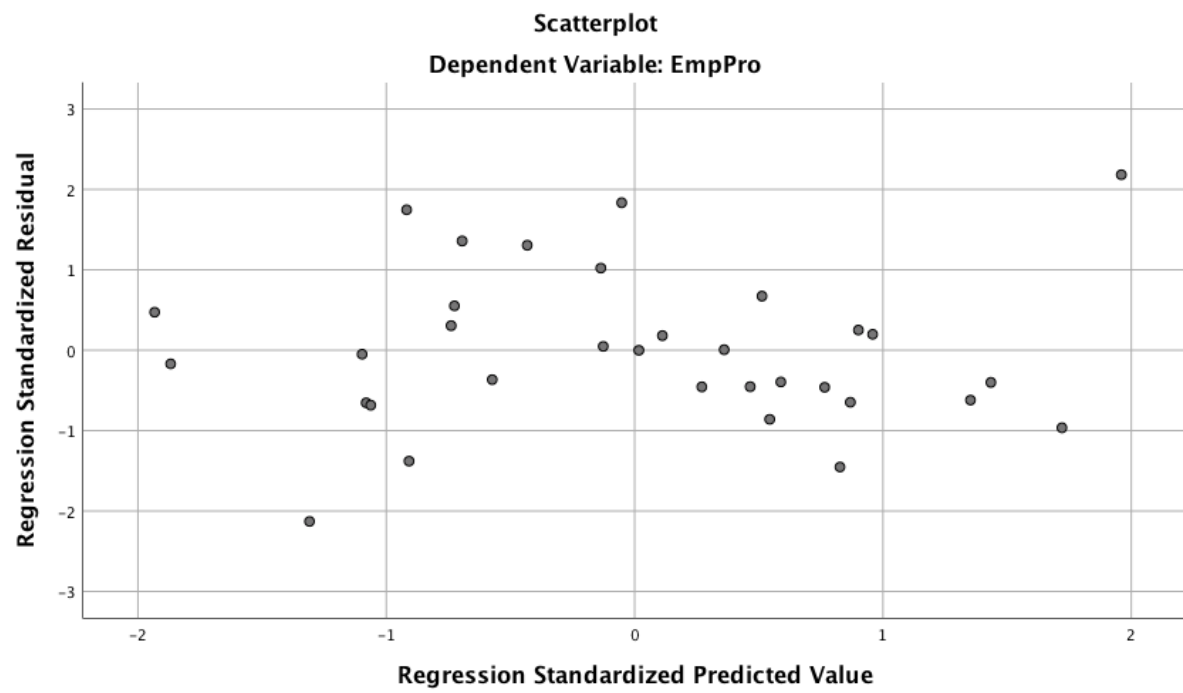


Figure 2. Scatterplot example for regression on Employment Protection.