The ‘Law Work & Security (2015)’: A quantitative analysis on the implementation of the law on employment, wages and type of contract

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Table of contents

1. Introduction

Labor laws play a crucial role in shaping the dynamics of the workforce in a country. These labor laws are established for protection of the employees of exploitation, preventing discrimination and promoting stability and growth in the economy (LLCC, n.d.).

On 11 October 2013, the Minister of Finance of the Netherlands, together with Prime Minister Rutte, presented an overview of the agreements that the government has made with the coalition parties by means of a letter to the House of Representatives. The parties emphasize the importance of public support. Because of the difficult economic conditions, it is crucial to have support in order to implement reforms in the labor market. The main aim of these reforms was to create more employment in the Netherlands. The reforms should lead to more flexibility and security, as well as better functioning of the labor market (Minister of Finance, 2013).

In 2015, the reforms came by introducing a new law called 'Wet Werk & Zekerheid (2015)'. When translated, it means: Law Work & Security (2015). This law entailed changes in various economic areas. Changes occurred in dismissal law, the legal position of flex workers on the labor market changed and changes occurred with regard to unemployment benefits. The aim of this thesis is to investigate the effects of implementing this law on employment levels, wages, and the types of contracts offered to employees.

Therefore, the research question that this thesis will answer is: *What is the effect of the implementation of the law 'Wet Werk en Zekerheid (2015)' on the employment level, the wages and the type of contract offered to employees?*

Van der Wiel (2009) studied the effects of employment protection legislation on wages in the Netherlands after a law change in 1999. In her concluding words, she mentioned that further empirical research has to be conducted on employment protection legislation, specifically using longitudinal micro-data. Therefore, by using longitudinal micro-data, this thesis contributes to the academic literature of employment protection legislation by researching the effects of the law 'Wet Werk en Zekerheid (2015)'.

Studying the implications of the law can challenge the economic theories associated with labor market dynamics. Possible new insights into the functioning of labor markets add to the academic relevance of this thesis. Furthermore, empirical research on the law's implementation

can enhance our understanding of the causal relationships between policy changes and their outcomes.

Additionally, countries vary in terms of the labor laws implemented in their economies. However, a comparison can be made by referencing a 2018 Korean study conducted by Beak & Park, which examined similar law changes. Lastly, a study by Heyma et al. (2020) evaluated the effects of the law 'Wet werk en Zekerheid (2015)', for the evaluation, Heyma et al. (2020) used CBS (Central Bureau of Statistics) Microdata, surveys and in-depth interviews. The data source and research methods differ from the data source and research methods used in this thesis. Another point where my thesis differentiates from the study by Heyma et al. (2020), is that my thesis specifically looks at the effect of the law on employment, wages and the type of contract offered to employees, where the study by Heyma et al. concentrates around the effectiveness of the labor laws regarding fulfilling its intended goals. Therefore, comparing the results of this thesis to the results of the evaluation of the study done by Heyma et al. (2020) is a relevant addition the academic literature.

In addition to the thesis' academic relevance, there are also a number of points where this thesis adds to the societal relevance. For instance, by researching the effect this law has on the employment level, wages and the types of contract offered to the employees, an assessment can be made if the labor law fulfilled it's purpose for implementation, regarding the expected increase in employment, flexibility and security in the labor market. Additionally, as mentioned above, labor laws form the dynamics of the workforce in a country. The findings in this thesis could help policymakers make more informed decisions when law changes are made in a country resulting in a more balanced relationship between protecting the rights of the employees and improving the economic growth of a country.

To gather data for this thesis, the LISS Panel will be used as a reliable source. This longitudinal dataset comprises 7,500 respondents, constituting a representative sample of the Dutch population. Thus, it serves as an excellent resource for measuring the effects of the 'Wet Werk & Zekerheid (2015)' law. The analyses will be performed using the fixed-effects method.

2. Institutional changes

As stated in the introduction of this thesis, the law 'Wet Werk & Zekerheid (2015)', implements multiple changes in the legislation around employment protection. The law focuses mainly on three different parts. The law intents to strengthen the legal position of the flex workers, it intends to decrease the firing cost for employers and the unemployment benefits will target re-entry of the workforce for the unemployed (Taco, n.d.)

2.1 Flex workers

On the first of July 2015, a law change was implemented that changed the 'chain arrangement'. Before the implementation of the change, an employer could postpone giving a permanent contract to an employee for three years. This has been set back to two years. Therefore giving flex workers an opportunity to be eligible for permanent contract sooner.

2.2 Firing costs

The law implementation comes with two changes regarding the firing costs for the employer. Formerly employers were given the option to choose the method of firing the employee. One being the cantonal judge and the other one being the Netherlands Employees Insurance Agency (UWV). Employers preferred choosing the UWV due to a smaller chance of having to pay a severance pay. The law stated that employers could only choose the UWV for economic grounds or when an employee is disabled for more than two years. For all other reasons for firing an employee, the employer has to go to the cantonal judge.

The law ensures that employees who have been employed for at least two years are entitled to a transition payment, on the condition that the employer terminated the contract. There is a maximum set to this transition payment of 75.000 euros in most cases. This gives to employee more space to find a suitable next job.

2.3 Unemployment benefits

On the first of January 2016, the maximum duration of the public unemployment benefits has been reduced from 38 months to 24 months. The aim of this reduction in unemployment benefits is to get the unemployed back to work more quickly. What was introduced on the first of July 2015 was that all work that an unemployed person is offered after receiving unemployment benefits for six months will be regarded as suitable work. In addition, an income settlement has been introduced within the unemployment benefits.

3. Literature review

The literature study will be split into three sections, independently targeting the effects of law changes on wages, employment and type of contract based on previous scientific studies on those subjects. Additionally, the study will conclude with the findings of the evaluation performed by Heyma et al. (2020).

3.1 Flex workers

Temporary contracts have received significant attention in recent years. Essentially, being able to offer temporary contracts to employees gives the employer more flexibility when adjusting to economic fluctuations. On the other hand, an employee receiving a temporary contract has less job security and benefits than employees with permanent contracts. Furthermore, the duration of temporary contracts can have an influence on the labor market outcomes. This literature study aims to investigate the empirical evidence on the effect that temporary contracts and legislation of duration of temporary contracts has on wages and on the level of employment. Many research papers that study changes in contract types legislation come to different conclusions to its effect on employment and wages.

In a study by Blanchard & Landier (2002), it was concluded that employment protection policies that make it easier for employers to give temporary contracts to employees, resulted in an increase in temporary contracts but had an inconclusive effect on the total employment. The cost of hiring employees had decreased but it came with a higher exit rate from employment (Blanchard & Landier, 2002).

In a paper that used longitudinal data on individuals from the European Community Household panel, the effects of employment protection reforms were measured in the period 1995-2001. They observed the effects of different reforms due to the number of countries they included in the paper. A finding was that policies that made accessible for employers to form temporary contracts, will result in an increase of the amount of temporary workers in said country (Kahn, 2010). However, the increase in the amount of temporary contracts distributed to the employees doesn't result in an increase of the overall employment of the country. That meant that permanent contracts were being replaced by the temporary contracts (Kahn, 2010). These findings support the claims made by Blanchard & Landier (2002) to some extent. Furthermore, increasing the duration of temporary contracts resulted in an increase in welfare for the employees, such as an increase in wages and promotion to permanent jobs (Kahn, 2010). This

is an interesting observation because this is in contrast to one reason for the shortening of the duration of temporary contracts in the Netherlands in 2015, for it was to incentivize employers to offer permanent contracts sooner.

In a 2018 study on employment protection legislation in South Korea, researchers examined the impact of employment protection legislation on outcomes such as employment. The 2007 implemented act restricted the use of temporary contract to a maximum of two years (Baek & Park, 2018). This is similar to one of the main changes that came with the implementation of the law 'Wet Werk & Zekerheid (2015)'. The findings of the studies was that the policy reform resulted in the decrease of employment. Firms furthermore increased investment in capital rather than employees. This increase in capital resulted in an increase in the labor productivity (Baek & Park, 2018). Given that the South Korean study bears so much resemblance to the one of the law changes that happened in the Netherlands in 2015. It would be interesting to see if the results of this thesis are comparable to theirs.

3.2 Firing costs

Changes in regulations regarding firing costs can have an impact on the labor market. According to theory, when the firing of employees is being made more difficult, it would give employees more power what results in higher wages. At the same time is it for employers less appealing to offer permanent contracts.

According to the theoretical literature, the effects that a transition payment entails can be compensated for on employees' wages. For example, a company can adjust the entry-level wages of employees and equate them so that the cumulative wage bill that the employee brings does not change (Lazear, 1990). This economic phenomenon is also referred to as 'bonding critiques', and because of this phenomenon, the dismissal costs associated with firing employees are also seen as a tax (Garibaldi & Violante, 2005).

An empirical study by Van der Wiel (2009) mentions that employment protection legislation can have a large impact on wages. After analyzing her fixed-effects regressions, she concluded that there is a strong positive effect of employment protection on wages. Van der Wiel (2019) mentions two possible reasons for this effect. The first reason being the insider/outsider theory, where stronger employment protection legislation increases the bargaining position of the insiders and therefore increases their wages. Secondly, she mentions that stronger employment protection legislation incentivizes firms to invest in their workers, and for workers to invest in firm-specific human capital. This would result in higher productivity and higher wages.

Theoretical literature also mentions that firms in the private sector make a calculation regarding the wage of the employee and the productivity of the employee. If this calculation comes back negative, the employee will be laid off. Taking into account that laying off an employee comes hand in hand with firing costs, such as transition payments, having fixed wages and considering that an employee might increases its productivity in the future. The firm will refrain itself from unnecessarily firing and hiring employees (Bentolila & Bertola, 1990).

When applying the literature to the implementation of the 2015 Dutch Law "Wet Werk & Zekerheid", which made it easier and more affordable to fire their employees, it would suggest an increase in permanent contracts.

3.3 Unemployment benefits

Unemployment benefits, or unemployment insurance is meant to deliver financial aid to people who have lost their jobs. The law 'Wet Werk & Zekerheid 2015' shortened the duration of the unemployment benefits. Adjusting the duration of the unemployment benefits can have an influence on the wages, level of employment and type of contracts in a country.

Reducing the unemployment benefits of the labor force by shortening the period of eligibility for those benefits was meant to decrease the time it took for the unemployed to find new jobs, by making it less attractive to stay unemployed. The impact of lengthening the period of unemployment benefits resulted in an increase of the time the unemployed stayed unemployed (Katz & Meyer, 1990). However, not all research done on the effect on unemployment came to the same conclusion. A study by Chetty (2008) concluded that there was only a minor significant effect that unemployment benefits had on the level of employment.

Job search theory predicts that an increase in unemployment benefits will lead to an increase in wages. This is because the unemployment would receive more time and or funding to find a more matching job, this is called the wage replacement effect (Rothstein, 2011). However, some studies shows that the duration of unemployment benefits has no effect on wages or the type of contract offered to the unemployed (Van Ours & Vodopivec, 2008).

One of the major characteristics of the unemployment benefits systems is that they are constantly changing, for it is difficult for the policymakers to find the optimal design (Tatsiramos & van Ours, 2014). This constant changing of systems combined with contradicting studies on unemployment benefits makes further research of the effects of unemployment benefits interesting.

3.4 Conclusion

With the implementation of the law 'Wet Werk & Zekerheid (2015)', I focus on three aspects of change. The shortening of temporary contacts, the decrease in firing costs and the shortening of unemployment benefits. Those changes, when looked at previously done empirical studies don't offer a straightforward answer on what the effects of the law change will be. Therefore, researching the effects of the law change is both scientifically as socially relevant because policy implementations can follow as a result of this thesis.

3.5 Evaluation of the labor law by Heyma et al. (2020)

Heyma et al. (2020) conducted an evaluation of the labor law using different data sources and research methods. Their findings indicated that the law, with its comprehensive measures achieved its intended goals, although to varying extents. It facilitated a transition from flexible contracts to more secure employment contracts, leading to increased job stability and enhanced income security for flexible workers. Consequently, Heyma et al. (2020) found that the disparity between permanent and flexible workers had decreased. The law also contributed to improved legal certainty and equality for both employees and employers. However, the 'Wet werk en zekerheid (2015)' had a limited impact in establishing a faster and more cost-effective dismissal system that motivates employees and encourages employers to hire permanent staff more promptly. Likewise, the measures regarding unemployment benefits demonstrated limited success in activating unemployed individuals, despite a partial reduction in income security. Concluding, Heyma et al. (2020) deemed most of the measures within the 'Wet werk en zekerheid (2015)' effective, accomplishing their objectives at a reasonable cost, except for the measures concerning unemployment benefits.

4. Hypotheses

The goal of this thesis is to research the effects that the law implementation in 2015 had on the employment rate, the wages of the employees and the type of contract that the employees have. Therefore, three hypotheses will be made.

4.1 Employment rate

The reduction from three to twee years of temporary employment for the employee resulted in a decrease in employment rate in Korea (Beak & Park, 2018). Furthermore, Kahn (2010)

mentioned that an increase in temporary employment does not affect the overall employment rate. Given these findings in the literature review, the expectation is that the employment rate will also decrease after 2015 in the Netherlands.

H_1: The implementation of the law 'Wet Werk & Zekerheid (2015)' has a negative effect on employment.

4.2 Wages

According to the literature, Kahn (2010) mentions that an increase in the duration of temporary contracts leads to higher wages for the employee. In addition to that, Lazear (1990) addresses that the wages depend on the height of the firing cost for employers. Given that the 2015 Dutch labor law decreased both the duration of temporary contracts and the firing costs means that there are forces countering each other's effect on wage. Therefore, the assumption is made that the null hypothesis will not be rejected.

H_0: The implementation of the law 'Wet Werk & Zekerheid (2015)' has no effect on wage.

4.3 Type of contract

Theoretical literature suggests that a lowering in firing costs increases the likelihood that an employer offers permanent contracts to an employee. Both Blanchard & Landier (2002) and Kahn (2010) mention that regulation that makes offering temporary contracts easier, increases the amount of temporary contracts. Thus, given the liturgical evidence, I assume that the law 'Wet Werk & Zekerheid 2015' will increase the amount of employees with permanent contracts.

H_1: The implementation of the law 'Wet Werk & Zekerheid (2015)' has a positive effect on the amount employees with permanent contracts.

5. Methodology

5.1 Data source

To examine the impact of the 2015 employment protection legislation, the LISS Panel was used with data waves from 2011 to 2020. I have used 2011 as the starting point for the data collection, to avoid the aftermath of the economic crisis in 2008, what might unnaturally interfere with the analysis. Furthermore, I have stopped in 2020 with the data collection

because the respondents fill in their surveys in May, and the covid pandemic also wouldn't interfere with the data analyzes. The data used is annually gathered by the LISS Panel and consists of 5000 households spread out over the Netherlands (LISS Panel, z.d.). LISS stands for Long-Term Internet Studies for the Social Sciences and consists out of all sorts of Dutch citizens from all walks of life (LISS Panel, z.d.) and therefore is a representative sample of the Dutch population. The attrition rate of the LISS Panel is 12% per year for the respondent, and the household attrition rate is 10% per year (LISS Panel, z.d.)

5.2 Sample selection

For this thesis, data waves regarding general background information of the household was merged with data waves regarding occupation and income. Therefore, the data allows for an examining of the effect that employment protection has on employment and wages and the type of contract.

While using the data from the LISS Panel, certain types of respondents were dropped from regression analysis in the dataset. When importing the dataset into STATA, it came to the attention that certain respondents failed to answer key questions that were necessary to perform the regression analysis. For that reason, respondents who didn't answer the questions 'does the respondent have paid work' and 'what type of contract does the respondent have' were dropped from the dataset. Additionally, respondents whose age was above the pension limit, and respondents who were self-employed were also dropped. This transformed the variable 'Type of contract' to a binary variable. Omitting these observations from the dataset made sure that the results of the analysis were not affected by irrelevant factors. This is because the analyses of this thesis only focus on the effect that the law had on the employees with permanent and temporary contracts.

After cleaning the dataset, the total number of observations used for the regression analysis was 39376. These observations were gathered from 9321 respondents. The number of respondents exceeds the total amount of respondents in the LISS Panel in a certain year, however this can be explained because ten years of data is being used. During that period, a number of respondents have stopped working for the LISS Panel and new respondents have been enlisted.

5.3 Empirical strategy

The implementation of the law 'Wet Werk & Zekerheid (2015)' can trigger changes in the employment rate, the wages of employees and the type of contract of employees. Therefore, assessing the causal effects of the law implementation is crucial, and a suitable research method has to be used. While analyzing the effects, you face certain challenges, such as endogeneity and unobserved heterogeneity. The fixed-effects model, compared to other methods such as OLS, offers unique advantages to mitigate those challenges and for that reason makes it an appropriate choice for measuring the effects.

Endogeneity occurs when the relationship between the implementation of the law and the outcomes of the regression is influenced by unobserved or omitted variables. The fixed-effects model addresses this phenomenon by controlling for the time-invariant unobserved factors that can affect the outcome of the regression. This mitigates the endogeneity issues and improves the accuracy measuring the effect that the law implementation has on the dependent variables. OLS makes the assumption that there is no correlation between the independent variable and the error term, making it more susceptible to endogeneity (Cameron & Trivedi, 2009).

Panel data is prone to having unobserved heterogeneity. This can, for example, come in the form of individual-specific characteristics. The fixed-effects model is designed to tackle this issue by controlling for time-invariant heterogeneity, this isolates the effect of the variable and reduces potential bias. OLS, on the other hand, doesn't address the time invariant heterogeneity and can therefore result in a greater chance of biased outcomes (Angrist & Pischke, 2009).

Lastly, the fixed-effects model is specifically designed to be used in panel data, that is because the model effectively uses the abundant information that is available in the panel data, resulting in more accurate relationships between the analyzed variables (Angrist & Pischke, 2009). OLS can be used to analyze panel data, but lacks the controlling attributes that the fixed-effects model has and is therefore, in this situation, inferior.

However, there is also a disadvantage in using the fixed-effects model. The number of parameters that have to be estimated may be large. This can result in a loss of degrees of freedom.

Furthermore, a Hausman Test has been performed to confirm that using a fixed-effects model is suitable for analyzing the data.

The hypotheses for the Hausman Test are:

H_0: Random-effects model is appropriate.

H_1: Fixed-effects model is appropriate.

After executing the Hausman test, the probability > chi2 equalled 0.000. This means that the null hypothesis can be rejected and the fixed-effects model is an appropriate model to use. The fixed-effects method is used to isolate the effect the implementation of the law has on the wages, employment and contract type.

The general formula for the fixed-effects model is expressed as:

$Y_{it} = \alpha_i + X_{it}\beta + \varepsilon_{it}$

Y_{it}: Is the dependent variable for individual i at time t.

A_i: Represents the individual-specific fixed effect or intercept for individual i.

X_{it}: Is a vector of independent variables for individual i at time t.

β: Is a vector of coefficients corresponding to the independent variables.

ε_{it}: Is the error term representing the unobserved factors that affect Y_{it}.

There are three dependent variables used in the analysis. These are wage, employment rate and the type of contract. By using the data from the LISS panel, the question asked to form the dependent variable wage is 'what is your net monthly income'. The value of the variable is expressed in euros. The dependent variable employment is represented by the question 'does the respondent have paid work'. This binary variable equals 0 when the respondent doesn't have paid work and equals 1 when the respondent does. The final dependent variable is the type of contract of a respondent, represented by the question 'what type of contract does the individual have'. This variable carries the value 1 with a temporary contract and the value 2 with a permanent contract. These three dependent variables are expressed in three formulas, as stated below.

Equation 1

$$Wage_{it} = \beta_0 + \beta_1 LawImplementation_{it} + X_{it}'\beta + \alpha_i + \varepsilon_{it}$$

Equation 2

$$Employment_{it} = \gamma_0 + \gamma_1 LawImplementation_{it} + X_{it}'\gamma + \alpha_i + \eta_{it}$$

Equation 3

$$TypeOfContract_{it} = \delta_0 + \delta_1 LawImplementation_{it} + X_{it}'\delta + \alpha_i + \zeta_{it},$$

The independent variable is the Law Implementation, this is a binary variable when to indicate the implementation of the law. Where the value of observations of the variable equals 0 before the year 2015 the implementation and 1 after the implementation of the law in 2015.

Control variables used in the analyses are the marital status of the respondents, the education level (with diploma) of the respondents, and the gender of the respondents.

Robust standard errors are used to ensure that the validity of the results from the analyses are sound, and are therefore necessary for valid causal interference. This is done by changing the way the standard error is calculated using the Huber Sandwich Estimator. It accounts for the heteroscedasticity in the residual distribution.

6 Analysis

6.1 Descriptive statistics

The descriptive statistics of this thesis will cover the averages of the respondents regarding age, school diplomas, and work. Furthermore, the distribution of the dependent variables, namely: the type of contract, the employment rate and the net monthly wages will be displayed via graphs.

Table 1

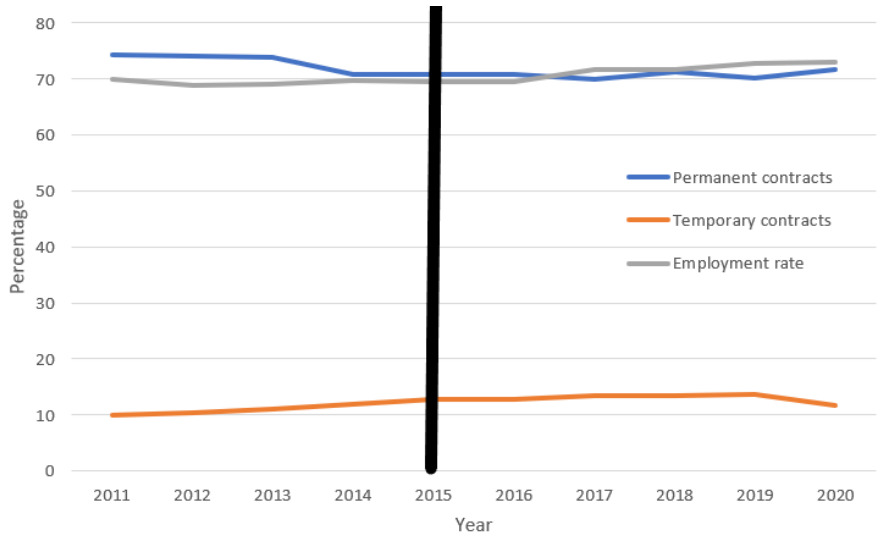
Descriptive statistics of respondents

	Respondents (2011-2020)
Gender (man)	*0.440*
Average age	*44.37*
Primary school	*0.038*
Intermediate secondary education	*0.189*
Higher secondary education	*0.120*
Intermediate vocational education	*0.263*
Higher vocational education	*0.243*
University	*0.111*
No education	*0.018*
Married	*0.516*
Separated	*0.004*
Divorced	*0.091*
Never married	*0.370*
Widowed	*0.018*
Weekly working hours	*29.08*
Paid employment	*0.705*
Observations	*39376*

As seen in table 1 above, it provides information of the respondents of the dataset. The variables used, except for 'Average age' and 'Weekly working hours' which is a literal number representing the average age of the respondent and the hours worked in a week, are on a scale from 0 to 1. Where a value of 0 equates to 0% and 1 equates to 100% of the respondents.

Graph 1

Distribution of contract type & employment rate

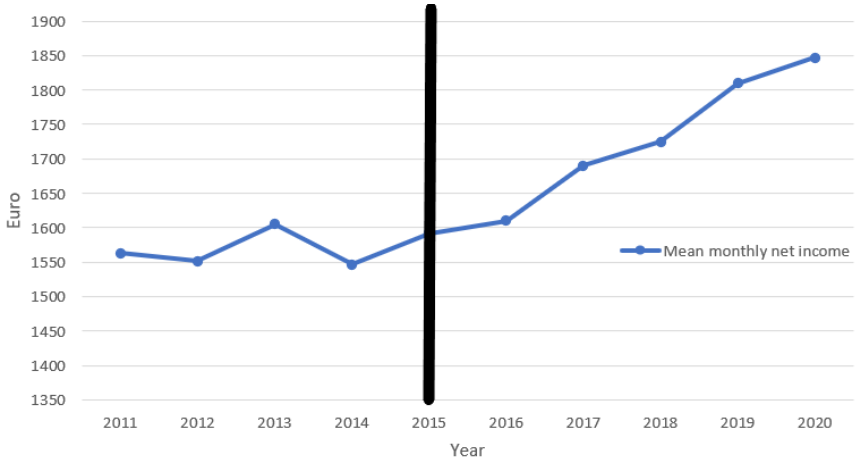


Observations: 39376

Graph 1 displays the distribution of the type of contract that the respondents have with the blue and orange line. The gray line shows the employment rate. For all variables, the values are substitutes for percentages, where 0 equals 0% and 1 equals 100%. The black vertical line in the year 2015 portrays the implementation of the labor law. For both the employment rate and the amount of temporary contacts, a small increasing trend line is visible. For the permanent contracts, a small decreasing trend line appears.

Graph 2

Distribution of net monthly wages



Observations: 35802

The distribution of net monthly wages is presented by graph 2. On the vertical axis, the amount of net wages in euro's, the black line displays like in graph 1 the moment the labor law was implemented in the Netherlands. The net monthly wages remained fairly constant until 2015, then a noticeable increase in net wages appeared until 2020.

6.2 Results

To find the correct method to measure the effects of the implementation of the new labor law on the employment rate, the net monthly wages and the type of contract of the employee, the Hausman Test was performed and concluded that the fixed-effects method was suitable for usage. Three fixed-effects regression analyses were made to measure the effect on the total amount of respondents in the data panel. Table 2 show the results on the first two hypotheses, it displays the fixed-effects regression analyses regarding the effect on the employment rate and the net monthly wages. Table 3 answers the last hypothesis, this fixed-effects regression analyses the effect of the implementation of the labor law on the type of contract of the employee. For all three models, the Huber Sandwich Estimator is used to calculate the robust standard errors.

Table 2

Fixed-effects regression analyses of law implementation on employment & net monthly wages

	Model 1	*Model 2*
Dependent variable	*Employment (Robust Std. Err.)*	*Net monthly wages (Robust Std. Err.)*
Law implementation	*0.007*	*72.808****
	(0.005)	*(26.605)*
Age	*-0.011****	*33.842****
	(0.001)	*(5.801)*
Marital status	*-0.016****	*-21.102****
	(0.003)	*(7.621)*
Education	*0.044****	*138.821****
	(0.007)	*(13.404)*
Gender	*-0.041****	*258.564****
	(0.008)	*(51.261)*
Constant	*1.215****	*-727.340****
	(0.064)	*(279.767)*
R-Squared	*0.110*	*0.008*
N	*32927*	*35802*

*Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1*

6.3 Unemployment rate & Net monthly wages

Table 2 shows that when the labor law was implemented in 2015, it accounted for an increase in the employment rate of 0.007. The employment rate is measured on a scale from 0 with 0% employment to 1 with 100% employment. I hypothesized following the literature study that the labor law would cause a decrease in the employment rate. This is, however, not the case. Nonetheless, the result for employment in model 1 and 2 of the fixed-effects regression are insignificant, which means that there is no significant correlation between the implementation of the labor law and the unemployment rate. Due to this insignificance, the null hypothesis regarding the effect on the employment rate cannot be rejected.

Furthermore, table 2 shows that the implementation of the labor law resulted in an increase in the net monthly wages of the respondents. Their net monthly wages increased with 72,81 euros. Model 2 shows that this finding had a significance of $p>0.01$. This results in the rejection of the null hypothesis. Kahn (2010) mentioned that an increase in the duration of temporary contracts leads to higher wages. At the same time, Lazear (1990) concluded that a decrease in firing costs also leads to higher wages. Because the duration of temporary contracts was decreased and the firing costs were lowered with the 2015 labor law, I expected that both changes would cause countering effects on the wages of the employees. However, with the significant results from model 2, I can now conclude that in the case of the 2015 labor law, the lowering in firing costs had a stronger effect than the decrease in temporary contract duration.

Table 3

Fixed-effects regression analysis of law implementation on type of contract

	Model 3
Dependent variable	*Type of contract (Robust Std. Err.)*
Law implementation	*0.005*
	(0.006)
Age	*-0.005****
	(0.001)
Marital status	*0.018****
	(0.003)
Education	*-0.006*
	(0.010)
Gender	*-0.014****
	(0.004)
Constant	*1.328****
	(0.072)
R-Squared	*0.14*
N	*29144*

*Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1*

6.4 Type of contract

Model 3, as seen in table 3 shows the effect of the labor law on the types of contracts that the employees had. The implementation of the law had an effect of 0.005. The range of the values for this model is between 1 and 2. A value of 1 means that an employee is in possession of a temporary contract, and a value of 2 means that an employee is in possession of a permanent contract. This means that an increase of 0.5% in the amount of employees with a permanent contract. However, model 3 fails to predict with confidence that the implemented labor law increased the amount of employees with permanent contracts, because the result is insignificant. Therefore, I cannot reject the null hypothesis regarding the type of contracts of the employees. This is an interesting result because the labor law made cheaper and easier for employers to fire employees with permanent contracts. Empirical literature by Blanchard & Laurier (2002) had suggested that that would result in an increase in the amount of permanent contracts. Furthermore, Kahn (2010) mentioned that policies that make it easier for employers to give temporary contracts to employees resulted in more temporary contracts. But the 2015 Dutch labor law made it less easy for employers to do so. Given that there was no significant

result in the fixed-effects regression, the assumption that a reverse effect what Kahn (2010) mentioned cannot be made.

6.5 R-Squared

A further observation is that, in all three models, the R-squared appeared weak. For models 1 and 2 respectively 0.11 and 0.08, for model 3, the R-squared equates to 0.14. These low R-Squared values are an indicator that the independent variable, the implementation of the labor law, is not explaining much in the variation of the dependent variables, like the employment rate, net monthly wages and type of contract of the employees.

7 Conclusion

This thesis measures the effect of the implementation of the law 'Wet Werk & Zekerheid (2015)' on the employment rate, net monthly wage and the type of contracts employees have in the Netherlands. After performing a literature review on labor law changes and the effects those changes brought with them, three hypotheses were formed. The first one being that the labor law implementation was to have a negative effect on the employment rate in the Netherlands. The second hypothesis predicted the labor law, due to conflicting studies, to have no effect on the net monthly wages of the employees. The third and last hypothesis stated that the labor law would have a positive effect on the amount of permanent contracts in the Netherlands.

After searching for suitable data source, the LISS Panel was selected, the LISS Panel provides data from respondents that reflect the Dutch Society. The selected waves I used for data ranged from the year 2011 to 2020. After considering different research methods and performing the Hausman Test, the best method to perform the calculations was the fixed-effects method.

A total of three models were made, consisting of three fixed-effects regressions. These regressions included robust standard errors, calculated via the Huber Sandwich Estimator.

To answer the main research questions, the regressions were analyzed. I found that the labor law had a positive but non-significant effect on the employment rate. This was the opposite of what was suggested by empirical literature and, as mentioned above, insignificant. Therefore, the null hypothesis regarding the employment rate could not be rejected. A positive significant effect was found on the net monthly wages of the respondents. This was against expectation

due to the contradictory evidence from Kahn (2010) and Lazear (1990) in the literature review. Nevertheless, the null hypothesis was rejected due to the significant positive effect on wages. The final effect that was analyzed was the effect that the labor law had on the type of contract of the respondent. A weak positive effect was found, meaning that there was a slight increase in permanent contracts. However, this effect wasn't significant and therefore the null hypothesis cannot be rejected unlike what was predicted by the empirical literature. This effect corresponds to the findings of the evaluation research conducted by Heyma et al. (2020). This effect can be explained due to the decrease in the firing costs and the lowering of the amount of temporary contracts an employer can offer to an employee. This combination of measures made it attractive for employers to offer permanent contracts.

7.1 Policy implications

The fixed-effects regression analysis that measured the effect of the law 'Wet Werk & Zekerheid (2015)' on employment and the type of contract had insignificant results. However, given that some results where statistically insignificant a number of policy implications could be taken into consideration.

If the law didn't live up to the expectations regarding its effectiveness, it would be a good idea to reevaluate the law itself. This is partly done in 2020 where the Dutch government reinstated the possibility of employers to give temporary contracts for three consecutive years instead of two. Furthermore, the unemployment benefits dropped with 5 percentage points for persons with a permanent contract (Wennekes, 2020). Further research on the effects of the recent changes can be done for evaluation.

Another policy implication could be to analyze the experiences of different regions that have enacted comparable labor laws such as in Korea, evaluating the results and identifying effective methods or valuable lessons acquired. By examining international examples, for instance, the UK has very limited employment protection legislation, and on the other end of the spectrum are Portugal, France, Norway and Spain (Griffith & Macartney, 2012). Policymakers can gain valuable insights for refining their policies and developing strategies to achieve the desired outcomes. Drawing on international best practices can offer valuable guidance for adjusting policies and informing potential approaches.

To conclude, even though there are insignificant results in the analysis, this paper has some policy implications, such as reevaluation of the law, or comparing similar policy internationally like in Korea, or the range of employment protection legislation in other European countries.

Wages did significantly increase due to the implementation of the labor law. However, this effect was not the reason for the creation of this law, the reason was increasing the employment, flexibility and security of the labor market. Policymakers have to take into account this effect, because looking from a neoclassical economic perspective, an increase in wage can lead to a decrease in employment. A paper by Card & Krueger (2000) found similar results when researching the relationship between wage and employment. Since improving employment was one goal of the policymakers, the increase in wages can work against their interest.

7.2 Limitations

While composing this thesis, I became aware of several limitations. Firstly, in evaluating the influence of labor law on contract types, it was recognized that respondents could transition from the two available contract options to a third one. This implies that a respondent could have shifted from a temporary or permanent contract to becoming self-employed. Unfortunately, this aspect was overlooked and not included in the fixed-effects regression analysis.

Moreover, the dataset did not incorporate macroeconomic trends. This omission arose due to the incompatibility of macroeconomic trends with the fixed-effects model employed. Including these trends could have potentially yielded a more precise depiction of the consequences stemming from the implementation of the labor law. Addressing this limitation in future studies can be achieved by adopting an alternative research methodology, such as Difference-in-Difference Estimation, which would be suitable for this particular investigation.

Throughout this thesis, a recurring trend has been the consistently low R-squared values observed across all analyzed models. This indicates a weak relationship between the variables used in the equations. One possible explanation for this could be the limited relevance of the variables chosen. However, it is important to note that the questions asked in the LISS Panel provided the only available data to measure employment levels, wages, and contract types. Despite their potential limitations, these variables had to be used in order to address the research questions at hand.

One additional limitation worth considering is the comprehensive nature of the labor law, which encompasses multiple aspects such as reduced firing costs, shortened temporary contracts, and decreased unemployment benefits. Given the bundled nature of these changes, it is possible that some of their effects might have counteracted one another. Moreover, it

becomes challenging to disentangle and attribute specific effects to each individual change due to their interrelated nature.

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