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Testing Okun's law in developed countries and the economic shocks in Spain

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This articles main objective is to provide an analysis of Okun's law for twenty OECD countries, including the effect of labour institutions and cost of business of these countries. Then it delves into a deeper analysis of Okun's law into Spain, Spanish males and females and the effects the crisis has had on these two groups. The crisis will have a detrimental effect on Spanish male employment seeing as most of the lost jobs were in male dominated sectors, with a subsequent surge in female unemployment.

Keywords: Okun's law; unemployment; Spanish crisis; gender disparity; equilibrium unemployment rates

I. Introduction

This paper studies the Okun relationship using Dixon *et al*. (2016) as a base. Okun's law is an empirical relationship between a country's growth rate and unemployment rate. It is a negative relationship and it's a general rule instead of a fixed law.

Okun's law is one of the fundamental laws in economics ever since its inception in the 60s. It is very much used in many studies because of its empirical robustness. Okun, the discoverer of this law, said that for every 3% rise in the rate of economic growth above its long term potential growth rate there would be a 1% decrease in unemployment. Okun would then attempt to stop inflation while also not head into a recession, and he gave the definition of what a recession is: two consecutive quarters of gross national product shrinking.

The relationship of the Okun's law is also sensitive to changes in the economic health of the country being analysed; its job structure and other factors. Some research suggests that labour market institutions, age and gender have an effect on the coefficient (Dixon et al, 2016) that illustrates the relationship between GDP growth and unemployment rate.

In this work, the Okun's coefficient is estimated on data from 20 countries from the Organisation for Economic Co-operation and Development (OECD) starting from 1987 to 2016. The objectives of this study are two-fold; first to estimate the empirical relationship of Okun between 20 OECD countries and then add the effects of labour institutions and cost of business in each country in the estimate. For labour institutions data is used from collective bargaining coverage and union coverage as the two variables and as for the cost of business the variable is an indicator that tells you how easy it is to start a business in a country. Second the focus is solely on Spain and do a pre and post 2008 crisis estimate on Spain in general and then with Spanish males and females separately before and after the crisis more concretely. This will be done only on Spain as to not overextend the scope of what is asked for this study, which can be done for each country in a future study.

The main finding of this research indicates the validity of the Okun's law estimate within the selection of countries in this study. On the other hand there is no correlation between labour institutions or the cost of business and with the equilibrium unemployment rate in this study. In the case of Spain, it can be seen that there is an effect pre and post crisis on the Spanish economy which increased unemployment and reduced economic growth. The crisis had a greater effect on the male population in the start which is logical, seeing as the crisis hit male dominated sectors hardest, which then leads to a rise in female unemployment.

This article will have the following structure: Section II will be a short review of previous studies. Section III presents and describes the empirical model. Section IV will explain the data set and where it was sourced. Section V the analysis done for the countries selected is presented, each of their equilibrium unemployment rates and then the effect the labour institutions have. Section VI will focus on Spain and how the crisis and gender affect the estimation. Finally section VII will give the conclusions of this study.

II. Previous studies

Harris and Silverstone (2001), Silvapulle and Moosa (2004) and Cuaresma (2003) support evidence of asymmetrical outcomes in the relationship between production and unemployment rate. In positive economic situations unemployment is less sensitive to economic shifts. On the other hand, negative economic situations like recession's causes unemployment to be more sensitive to the changes of economy. Harris and Silverstone (2001) also posit that the US economy is more likely to return to long run equilibrium aftershocks in the economy than other OECD countries and that could be linked to labour markets structures in each country.

Dunsch (2016) shows that certain social groups could be left out in periods of economic growth such as the youth in Poland when certain institutions and labour structures are not present in the country to help transition towards stable careers. Guisinger *et al.* (2015) shows in a US study that more rigid structures such as a higher union membership and non-manufacturing employment is associated with higher Okun's coefficients.

Lal *et al.* (2010) find that Okun's law does not apply to developing countries in Asia with unstable governments and fluctuating inflation, while in more stable Asian countries the law is valid. This means that when trying to analyse countries their stability, economic situation and the status of their demography has to be taken into account. A very stable Sweden will produce better results than a less stable Somalia. So when studying a country going through a period of instability, this may affect the results of the analysis.

Ball *et al.* (2015) show that forecasters trust in the validity of Okun's Law and why it is still in use today.

III. Empirical model

In this work the gap model as specified by Okun (1970) is used which is the relationship between the log output and unemployment which may be written as:

$$(u - u^*) = -\Phi(y - y^*) \qquad (1)$$

Where *u* is the unemployment rate, *y* is output, *y** is potential output in logarithmic terms, *u** indicates the equilibrium unemployment rate and Φ is the Okun coefficient to be estimated. (y-y*) results in the output gap. A Φ = 3 means that 1 percentage point decrease in output growth rate is associated to a 3 percentage point increase in the unemployment rate.

To estimate equation (1) the following econometric model is used:

$$u = \alpha - \Phi(y - y^*) + \varepsilon \qquad (2)$$

This is the model used for each country independently. α is the country specific fixed effect which, in this model represents u* the country specific equilibrium unemployment rates. Each case will have a different α and Φ.

To estimate the model it's necessary to have date on the potential output but this is not a variable that the statistics institutes measure. Generally the output gap is estimated using the Hodrick-Prescott (HP) filter[1]. The HP filter is used to remove the cyclical component of a time series from raw data. It is used to estimate the path for the potential output y* which obtains a smoothed-curve representation of a time series by minimizing the variance of the output around its potential subject to a penalty function that punishes deviations along the trend. Formally, the function to be minimized is:

$$\Theta = \sum_{t=1}^{T}(y_t - y_t^*)^2 + \lambda \sum_{t=2}^{T-1}((y_{t+1}^* - y_t^*) - (y_t^* - y_{t-1}^*))^2 \qquad (3)$$

Where the parameter λ controls the smoothness of the series .The recommended value is 100 for annual time series.

IV. Data

Data for this study corresponds to 20 OECD countries starting from 1987-2016. 5 of these countries are non-European countries (Australia, Canada, Japan, New Zealand, and United States) and 15 European countries (Austria, Germany, Denmark, Spain, France, Finland, Norway, United Kingdom, Switzerland, Greece, Ireland, Italy, Netherlands, Portugal and Iceland).

This data was recollected from the World Development Indicators database[2]. The variables gross domestic product (GDP) per capita and unemployment rate are used.

[1] *Arturo Estrella (2007) "Extracting Business Cycle Fluctuations: What Do Time Series Filters Really Do" suggests that HP filter produces the best relative fit when GDP is applied to log levels.*

[2] *https://datacatalog.worldbank.org/dataset/world-development-indicators World Bank data catalogue.*

The GDP per capita is in constant 2010 dollars meaning that the production of each year is measured with prices of 2010. This way the changes observed are due to the quantity produced and not the changes in price of the values measured. Unemployment rate is taken as a percentage of total labour force without employment from the labour force. The data is part of the International Labour Organization (ILO) estimates and is harmonized to ensure comparability across countries and over time by accounting for differences in data source, scope of coverage, methodology, and other country-specific factors. Table 1 shows the average of the unemployment rate for 87-16 for the sample that that is analysed. For example the difference between the highest (Spain) and the lowest (Switzerland) is a 14 point difference. The few countries that go above an average unemployment rate of 10 percentage points are Spain, Finland and Greece.

Table 1. 1987-2016
Average unemployment rate

Country	Avg. unemployment rate		
Australia	6.71	Iceland	4.06
Austria	4.85	Italy	9.90
Canada	8.01	Japan	3.96
Switzerland	3.82	Netherlands	4.99
Denmark	6.16	Norway	4.12
Germany	7.72	New Zealand	6,18
Finland	10.47	Portugal	7.98
France	9.88	Spain	17.33
Greece	12.98	United Kingdom	6.74
Ireland	9.47	United States	6.07

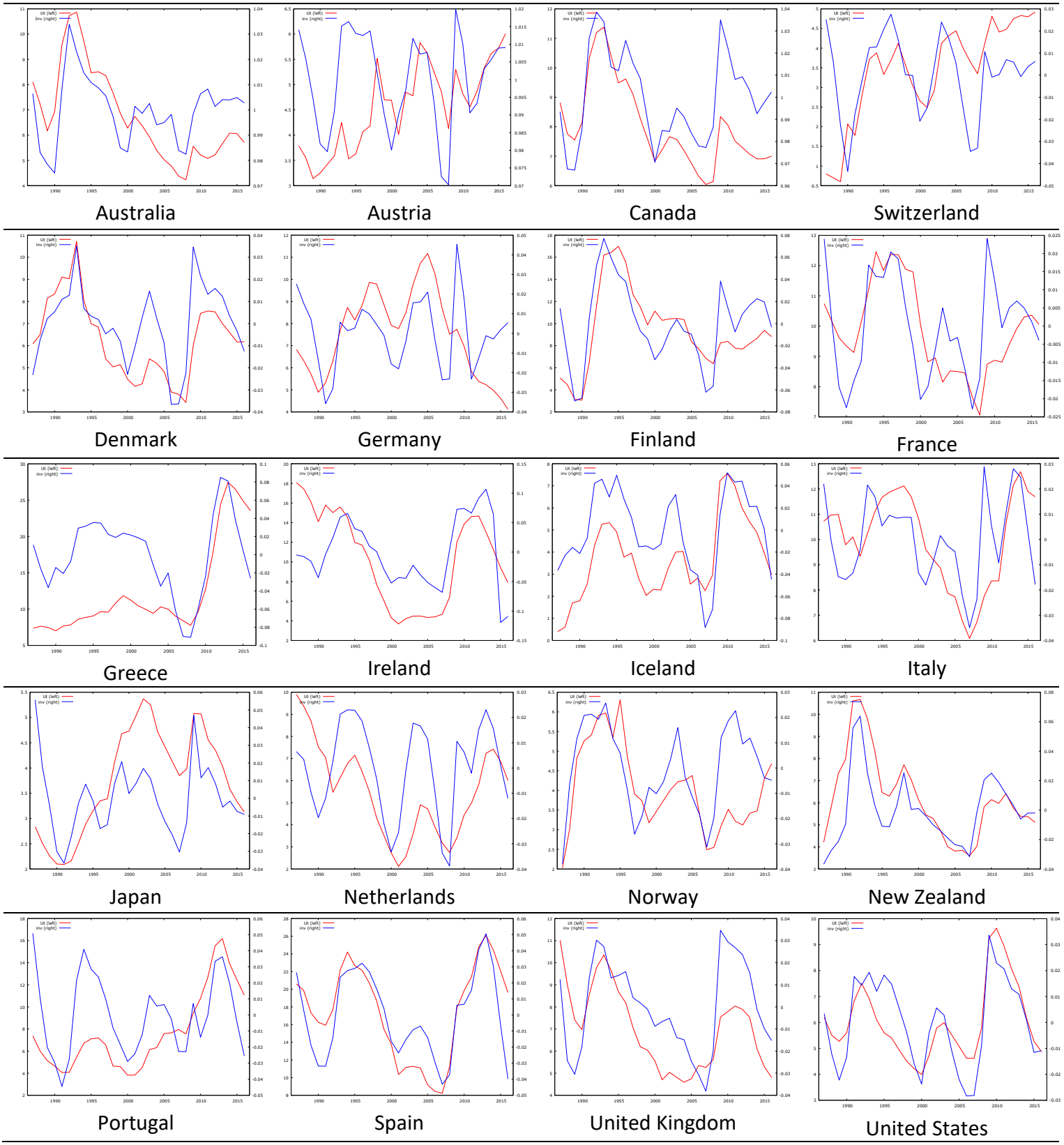

Figure 1 Unemployment rates from Table 1 and inverse output gaps (1987-2016). Red lines being unemployment rates and blue lines are the inverse output gaps

V. Parameter estimates

Okun's law is estimated by simple ordinary least squares (OLS) using the GDP growth and unemployment rate with the HP filter to account for business cycles. In Figure 1 the evolution of the unemployment rates and the inverse of the output gap during the periods of 1987 and 2016 are plotted. It can be seen that the unemployment rates and output gaps follow each other. It also shows economic fluctuations have less impact on the unemployment rate of countries such as Australia and Canada which fluctuate between 4.5%-11% and 6%-12% respectively, while having more impact on others such as Spain and Greece which fluctuate between 8%-25% and 7.5%-27.5%.

Table 2 shows the parameter estimates for α_i which is equal to the equilibrium unemployment rate (u*) using the baseline econometric model (2) with the HP filter to calculate the potential output. Table 2 summarizes the estimation results of the equilibrium rate of equilibrium unemployment for each OECD country (u*) which varies for each country but will remain constant in the period of time.

Table 2. 1987-2016
Okun coefficient

Country	u_i* (p value)	Φ
Australia	6.76 (0.00)	0.84
Austria	4.56 (0.00)	0.13
Canada	8.01 (0.00)	0.52
Switzerland	3.44 (0.00)	0.19
Denmark	6.31 (0.00)	0.71
Germany	7.48 (0.00)	0.34
Finland	9.41 (0.00)	0.70
France	9.86 (0.00)	0.55
Greece	12.23 (0.00)	0.72
Ireland	10.40 (0.00)	0.46
Iceland	3.70 (0.00)	0.36
Italy	9.99 (0.00)	0.58
Japan	3.75 (0.00)	0.19
Netherlands	5.48 (0.00)	0.48
Norway	4.04 (0.00)	0.35
New Zealand	6.19 (0.00)	0.62
Portugal	7.69 (0.00)	0.62
Spain	17.89 (0.00)	1.60
United Kingdom	6.99 (0.00)	0.57
United States	6.01 (0.00)	0.68

Table 2 shows that the estimates are varied. Country ranges vary from a low 3.44 from Switzerland to a high 17.89 from Spain. The mean equilibrium unemployment rate $\bar{u}$*is 7.51. The Okun coefficient is 0.57 which is the arithmetic mean of each countries Okun

coefficient, similar to Dixon. Some countries like US or Australia which are below the average are associated with low unemployment and strong growing unemployment. Other countries like Finland and Norway which are seen as having a socially fair country with strong institutions have very different coefficients. The denominated PIGS (Portugal, Ireland, Greece and Spain) all have coefficients higher than the mean.

Table 1 shows the average unemployment for each country between 1987 and 2016. It also seems to indicate a strong correlation between the estimated value of the unemployment rate and the average country unemployment.

GDP and Okun

Although no one factor can explain for the differences between countries, countries with lower Okun's coefficient tend to have higher productivity.

In Figure 2 the average unemployment rate from the ILO database from Table 1 against the GDP per capita for 2016 is plotted:

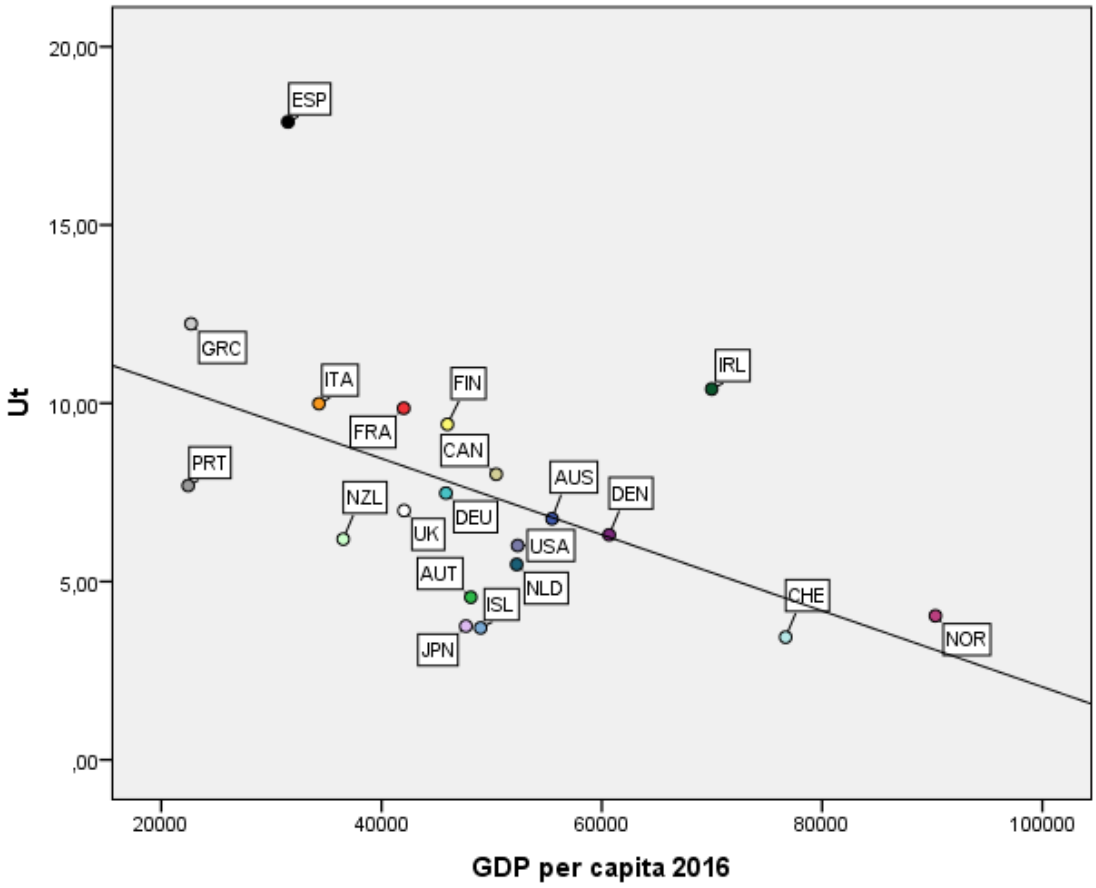

Figure 2 Relationship between equilibrium unemployment rate and GDP per capita for each OECD country.

Table 3. Relationship with GDP		
Constant	12.72	(0.00)
GDP per capita 2016	-0.0001	(0.02)

Figure 2 and Table 3 show that countries with higher GDP per capita tend to have lower equilibrium unemployment rate. On the other extreme it can be seen that Greece and Spain which have lower than average GDP per capita have higher u* coefficient. On the other hand countries like Switzerland and Norway which have the highest GDP per capita are among the lowest u* coefficient.

Labour institutions

This section takes into account cost of business, union coverage and collective bargaining to see how they affect the Okun estimation of the 20 OECD countries. Cost of business is taken from the World Development Indicator database and it measures how much time and money it takes to start operating a small or medium sized company.

Union coverage measures the number of employees that are members of a trade union and collective bargaining is the percentage of employees whose work terms and conditions are made between an employer and a trade union. Data obtained from the OECD stats database.

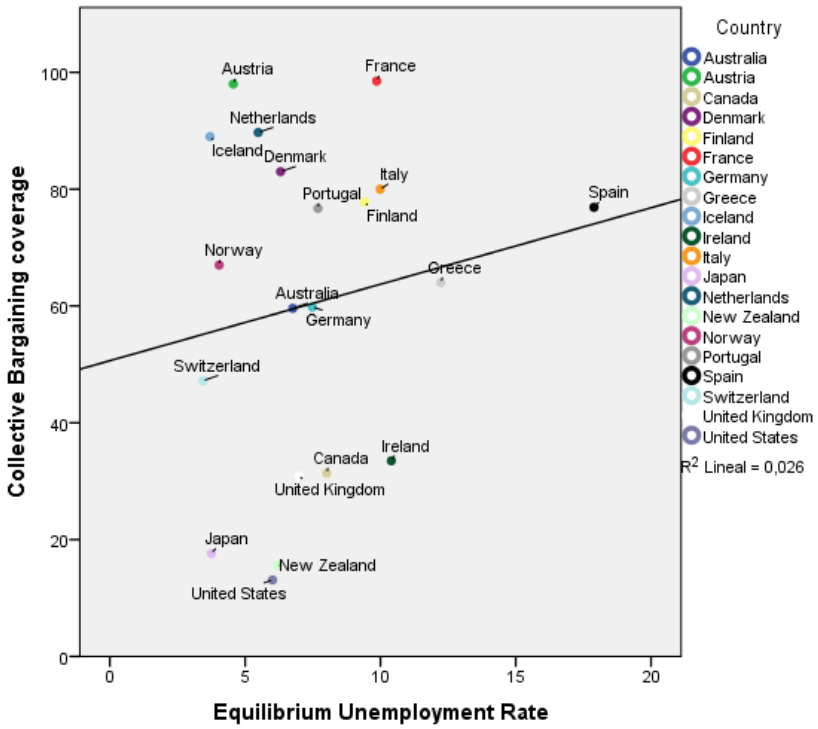

Figure 3 Collective Bargaining against Okun coefficient for OECD countries

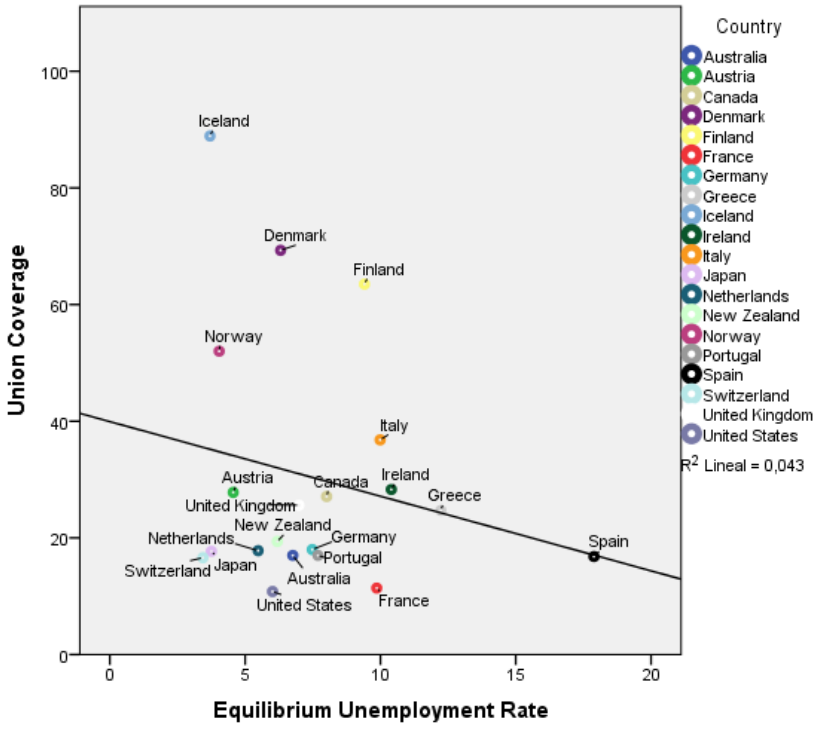

Figure 4 Union coverage against Okun Coefficient for OECD coutnries

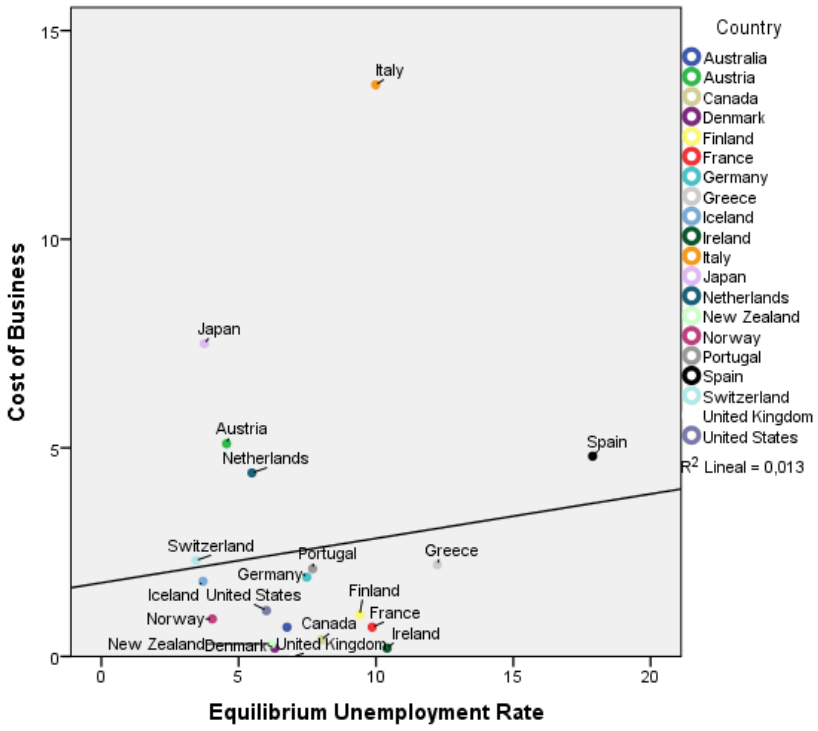

Figure 5 Cost of business against Okun coefficient for OECD countries

As shown in the different graphs (Figure 3, 4, 5) there is no clear trend to be made although Spain is an outlier in that it has a higher Okun coefficient even though its cost of business, union coverage and collective bargain coverage is around the same level as other countries. This could indicate other underlying variables in effect which we

are not taking into account. Table 4 shows the result of adding cost of business, collective bargaining and union coverage into the estimation and their p-values.

Table 4. Relationship with institutions		(p-values)
Constant	6.93	(0.00)
Cost of business	0.03	(0.91)
Collective bargaining	0.033	(0.32)
Union coverage	-0.05	(0.25)

Table 4 shows that there is no statistical significance of these variables and don't reject the hypothesis that these institutions have no effect the on relationship between equilibrium unemployment and cost of business, collective bargaining and union coverage for this study for the OECD countries chosen for this study.

VI. The case of Spain

This section focuses on Spain and goes into how the Okun coefficient changes in the Spanish pre-crisis period and Spanish post-crisis period of 2008 and how the gender variable changes the estimation.

Okun pre-post estimations

Table 5. Spanish Crisis 2008				
	u*	(p value)	Φ_i	
Pre Spanish Crisis	16.61	(0.00)	1.71	(0.00)
Post Spanish Crisis	19.96	(0.00)	1.15	(0.01)

As stated in Dixon et al (2016) econometric estimates show sensitivity to economic recessions; Owyang and Sekhposyan (2012) provide evidence that in US recessions the unemployment rate was more sensitive to GDP fluctuations.

Table 5 shows the equilibrium unemployment rate for the period 1987 – 2007 which is the Spanish pre-crisis period and the equilibrium unemployment rate for the period of 2008 – 2016 which is the Spanish post-crisis period. Table 5 shows Spain's pre crisis 2008 coefficient was at 16.61 while after crisis it's at 19.96 indicating there is sensitivity to these market shocks causing a contraction in the economy of 3.7 percentage points. Spanish unemployment rate went from 8.23% to 24.79% from 2007 to 2012 indicating a great sensitivity to the economic recession. While in the same time span from 2013 to 2018 the unemployment rate went from 26.09% to 15.20% indicating less sensitivity towards the economic growth.

A contrast is done on whether whether the post crisis has an effect on the output gap and start by defining the empirical model:

$$U_t = \alpha + \alpha_1 Cri_t - \Phi(y_t - y_t^*) - \Phi_1(y_t - y_t^*)Cri_t + \varepsilon_t \quad (4)$$

Where Cri is a dummy variable defined by all the observations of the Spanish crisis period starting in 2008 and ending in 2016.

Is the crisis a variable that has an effect on the equilibrium unemployment rate? $\Phi_1$has the expected difference on an economy affected by the crisis against one that isn't affected by the crisis. A contrast is done where:

$H_0 : \alpha_1 = 0 \ \ and \ \Phi_1 = 0$ against $H_a \ \alpha_1 \ \neq 0 \ and \ \Phi_1 \neq 0$

If the null hypothesis is not rejected, then it will be known that the variables for crisis are not conjointly significant. These are the results:

```
Restriction set
 1: b[Cri] = 0
 2: b[GtCri] = 0

Test statistic: F(2, 26) = 4.25859, with p-value = 0.0251301

Restricted estimates:

            coefficient   std. error   t-ratio    p-value
  ---------------------------------------------------------
  const        17.4870      0.613144    28.52      3.10e-022 ***
  α1            0.000000    0.000000    NA         NA
  Φ          -160.449       23.6967      -6.771     2.36e-07  ***
  Φ1            0.000000    0.000000    NA         NA

  Standard error of the regression = 3.35833
```

The resulting p-value of the contrast test with a F-distribution of (2, 26) is p- value = 0.025 meaning that the null hypothesis is rejected with a level of significance of 5%. The variable crisis has positive effect on equilibrium unemployment rate, meaning equilibrium unemployment rate grows with the effects of crisis.

Okun and the gender effect

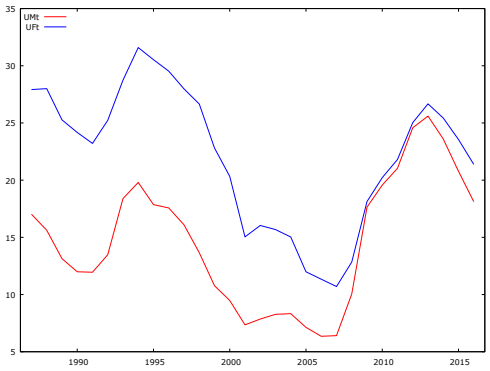

Figure 6 Evolution of Spanish males (red) and females (blue) unemployment rates from 1987 to 2016.

The crisis affected the population as whole very hard, but here a disparity is seen of each genders equilibrium unemployment rate. In 2007 male Spanish unemployment rate is 6.41% reaching its peak in 2013 at 25.6% and lowering in 2016 to 18.12%. On the other hand Spanish female unemployment rate started in 2007 at 10.7% reaching its peak in 2013 at 26.67% and lowering in 2016 to 21.38%. Male unemployment grows 3 times as much while female unemployment grows 2.5 times as much, granted female unemployment was already higher than male unemployment. From here it is seen that male sectors were hit a bit harder due to the loss of jobs in the construction and manufacturing sectors. Another point of note is that in 2007 the male female unemployment differential is of 4 points in 2007 while in 2016 the gap has closed to 3 points. As Seguino (2009) states that the differential employment impact on women versus men will vary across countries and that the effects depend on whether more jobs are lost in female or male dominated sectors of the economy. Men will be the hardest hit by the sharp drop in demand, with mounting job losses at a higher rate than women. But then sectors dominated generally by women like education, health and social services will be affected and unemployment rises disproportionally as public sector budgets cuts are made.

It cannot be said for certain how each genders coefficient will evolve once the Spanish economy is in a more stable and healthy economy but the male unemployment is starting to fall at a higher rate than the female unemployment which could indicate that they are trending towards the equilibrium for each gender.

This brings the question, is this reflected in the equilibrium unemployment rate for Spanish males and Spanish females?

In this subsection a gender analysis is done to see how this variable affects to the estimates in the Spanish pre-crisis period and Spanish post-crisis period. An estimation

is done on the equilibrium unemployment rate for the Spanish male and female work force. The data come from the World Development Indicators data base

For the male equilibrium unemployment rate we use male unemployment rate as a percentage of the male labour force and the model is estimated for 1987-2007 with subsamples pre and post crisis. We use the same process for the estimation of the unemployment equilibrium rate using the female unemployment rate as a percentage of the female labour force.

Table 6. Unemployment rate in Spain by gender

	u*	(p value)	Φ_i	
Male Ut	14.65	(0.00)	1.61	(0.00)
Pre Crisis Male Ut	12.88	(0.00)	1.43	(0.00)
Post Crisis Male Ut	19.17	(0.00)	1.26	(0.00)
Female Ut	22.09	(0.00)	1.60	(0.00)
Pre Crisis Female Ut	22.89	(0.00)	2.21	(0.00)
Post Crisis Female Ut	20.93	(0.00)	1.01	(0.00)

Table 7 shows that the male equilibrium unemployment rate has risen almost 5 percentage points. On the other hand the female's equilibrium unemployment rate has lowered by almost 2 percentage points. There seems to be a gender effect from the crisis period.

An empirical model is specified and adds the crisis and gender variables into the proposed model (2) to test the significance of these variables together:

$$\mathbf{U_t}=\alpha + \alpha_1 Crisis_t + \alpha_2 Male_t - \Phi(y_t - y_t^*) - \Phi_1(y_t - y_t^*)Cri_t - \Phi_2(y_t - y_t^*)Male_t + \varepsilon_t \quad (5)$$

Where $\mathbf{U_t}$ is a vector column of male and female unemployment. Cri is a dummy variable defined by the observations from years chosen as crisis years from 2008 to 2016. Male a dummy variable defined by the observation of male unemployment.

A contrast is done of the hypothesis that the variable gender and crisis are individually and conjointly significant.

First a contrast on whether of the gender variables are conjointly significant.

$H_0 : \alpha_2 = 0 \ and \ \Phi_2 = 0$ against $H_a \ \alpha_2 \neq 0 \ and \ \Phi_2 \neq 0$

If the null hypothesis is not rejected then it can be said that these variables are not significant variables. This is the results of the contrast test:

```
Restriction set
```

```
 1: b[α_2] = 0
 2: b[Φ_2] = 0

Test statistic: F(2, 54) = 64.6323, with p-value = 4.69358e-015

Restricted estimates:

            coefficient    std. error    t-ratio    p-value
  ---------------------------------------------------------
  const       49.4270        5.34811       9.242     7.35e-013 ***
  α_1          92.4281       37.2853       2.479     0.0162    **
  α_2          0.000000      0.000000       NA        NA
  Φ           -0.00123650    0.000203550   -6.075     1.15e-07  ***
  Φ_1         -0.00273399    0.00122753    -2.227     0.0300    **
  Φ_2          0.000000      0.000000       NA        NA

  Standard error of the regression = 5.10481
```

With an F distribution of (2, 54) the p-value = 4.69358e-015 from the resulting contrast is less than 0.05 meaning the null hypothesis that gender is not a significant variable is rejected, thus it can be said that there is a difference in the equilibrium unemployment rate between males and females.

The crisis variable is statistically significant because of the test done beforehand. Now the statistical significance of the crisis variables and gender variables together is contrasted.

H_0 : $\alpha_1 = 0, \Phi_1 = 0, \quad \alpha_2 = 0 \ and \ \Phi_2 = 0$ against H_a $\alpha_1 \neq 0, \Phi_1 \neq 0, \quad H_a \quad \alpha_2 \neq 0 \ and \ \Phi_2 \neq 0$

```
Restriction set
 1: b[Cri] = 0
 2: b[Male] = 0
 3: b[GtCri] = 0
 4: b[GtMale] = 0

Test statistic: F(4, 54) = 61.8908, with p-value = 1.57127e-019

Restricted estimates:

            coefficient    std. error    t-ratio    p-value
  ---------------------------------------------------------
  const      37.9823        5.92241        6.413     2.81e-08 ***
  α_1         0.000000      0.000000      NA        NA
  α_2         0.000000      0.000000      NA        NA
  Φ          -0.000717489   0.000214550   -3.344     0.0015   ***
  Φ_1         0.000000      0.000000      NA        NA
  Φ_2         0.000000      0.000000      NA        NA

  Standard error of the regression = 6.43442
```

With an F distribution of (4, 54) the resulting p – value = 1.57127e-019 from the contrast is less than 0.05 meaning the null hypothesis that the variables gender and crisis are not conjointly significant is rejected. Thus it can be said that the crisis and

being female has a positive effect on the equilibrium unemployment rate, meaning that being in a crisis and being female will have a higher equilibrium unemployment rate.

The data contrasted backs the data shown at the start of the section and in Figure 6. Gender has an effect on the equilibrium unemployment rate.

VII. Conclusion

Just like the base paper used for this article, Okun is shown to be resilient. In the same fashion as other studies and in particular just like Dixon et al. we relate the unemployment rate to the equilibrium unemployment rate and the GDP gap.

This article explores 20 OECD countries and the relationship of their GDP and their unemployment rate. After this labour institutions are added to see the effects on the estimate which were inconclusive towards the relationship of the GDP and unemployment rate.

Then this article digs into the Spanish pre-crisis and Spanish post-crisis effects on the unemployment rate of Spain and the Spanish males and females. The result is a greater overall effect at first on the male equilibrium unemployment which is logical as the crisis which had and has terrible effects on all the population, destroyed mainly male dominated employment but then an after surge in female unemployment once budget cuts are made in female dominated sectors.

20 OECD countries were used for this study, as stable countries give the best results. The range starts in 1987 and ends in 2016 from what are commonly called western developed countries. This helps look at differences between each country and their specific quirks, and shining a light on Spain with it's higher than the average European Union unemployment rate.

While labour institutions and cost of doing business have real life effects on unemployment, the results are inconclusive for this article. Future studies on whether southern European countries close the unemployment gap with the northern European countries. Another future study can be done on the effects on the different demographic groups in Spain on whether Spanish males and females close their differential gap or will go back to pre-crisis levels.

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Appendix A

Cost of starting a business sourced: TheGlobalEconomy.com. (2019). *Cost of starting a business by country, around the world | TheGlobalEconomy.com*. [online] Available at: https://www.theglobaleconomy.com/rankings/Cost_of_starting_business/ [Accessed 24 Jan. 2019].

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Table A1 provides the information on cost of business, union coverage and collective bargaining for each of the countries for 2016.

The higher the cost of business variable, the harder it is to do business in that country. Union coverage represents the percentage of work force in a union. Collective bargaining represents the percentage of work force with work conditions negotiated between a union and employer.

Table A1. Cost of business, Union coverage and collective bargaining for 2016

Country	Cost of business	Union coverage	Collective bargaining
Australia	0.7	17.04	59.58
Austria	5.1	27.77	98.00
Canada	0.4	27.08	31.40
Switzerland	2.3	16.59	47.23
Denmark	0.2	69.35	83.00
Germany	1.9	17.97	59.76
Finland	1	63.47	77.81
France	0.7	11.40	98.46
Greece	2.2	24.67	64.00
Ireland	0.2	28.26	33.52
Iceland	1.8	88.87	89.00
Italy	13.7	36.83	80.00
Japan	7.5	17.68	17.60
Netherlands	4.4	17.78	89.65
Norway	0.9	52.00	67.00
New Zealand	0.3	19.45	15.60
Portugal	2.1	17.05	76.74
Spain	4.8	16.80	76.94
United Kingdom	0	25.65	30.90
United States	1.1	10.808	13.10