

## **The Main explanatory variables of increasing unemployment in OECD countries with special attention to Spain.**

Unemployment is one of the main issues affecting the European economies. Numerous explanations have been put forward to clarify it, such as the deficient demand theory and the rigidities caused by the labour market institutions (LMIs). Nickell (1997) and Blanchard and Wolfers (2000) set out that LMIs are the main cause. Stockhammer and Klar (2010) add that fluctuations in capital accumulation and its effect on aggregate demand are the main factor affecting unemployment, downplaying the effect of LMIs. In this paper I will argue that the policies deriving from the models could be more solid if they addressed individual countries and that by adding the effect of profits and wealth taxation, the model improves considerably. Firstly I briefly discuss the papers written by the aforementioned authors. Secondly I present the data I obtained about my subject of study, Spain, which incorporate macro shocks, labour market institutions (LMIs) and then I add the aforementioned taxation inputs, improving the model statistically. This is followed by a discussion of the main coefficients. Thirdly I discuss the importance of taxation and income distribution. Finally I outline the policy recommendations for Spain. I include an appendix containing the data used to generate the model.

## 1. Discussion of previous papers

### 1.1 Nickell

Nickell's paper addresses the questions of higher unemployment in the 80's and 90's and the factors causing the variation thereof in OECD countries. He obtains the following table

Table 2  
*Regressions to Explain Log Unemployment Rate (%)*  
(20 OECD Countries; 1983-8 and 1989-94)

	1 Total unemployment	2 Long-term unemployment	3 Short-term unemployment
Owner Occupation Rate (%)	0.013 (2.6)	-0.0007 (0.1)	0.01 (2.7)
Employment Protection (1-20)		0.052 (1.4)	-0.061 (2.8)
Replacement Rate (%)	0.013 (3.4)	0.011 (1.3)	0.013 (2.6)
Benefit Duration (years)	0.10 (2.2)	0.25 (2.7)	0.045 (0.8)
† Active Labour Market Policies	-0.023 (3.3)	-0.039 (2.8)	-0.097 (1.2)
Union Density (%)	0.010 (2.3)	0.010 (1.0)	0.0031 (0.5)
Union Coverage Index (1-3)	0.38 (2.7)	0.83 (2.3)	0.45 (2.1)
Co-ordination (Union+Employer) (2-6)	-0.43 (6.1)	-0.54 (3.6)	-0.34 (3.8)
Total Tax Rate (%)	0.027 (4.0)	0.023 (1.6)	0.028 (3.5)
Change in Inflation (% pts. p.a.)	-0.21 (2.2)	-0.30 (1.6)	-0.29 (2.7)
Dummy for 1989-94	0.15 (1.5)	0.30 (1.8)	0.092 (1.0)
R <sup>2</sup>	0.82	0.84	0.73
N (countries, time)	40 (20, 2)	38 (19, 2)	38 (19, 2)
Hausman Test of the Random Effects Restriction	$\chi^2_{10} = 6.35$	$\chi^2_{10} = 4.52$	$\chi^2_{10} = 6.86$

Entitlement protection reduces unemployment in the short run, but increases it in the long run. The duration of benefits have a positive effect on unemployment, but this is offset by active labour market policies. According to Nickell (1998, pg. 813) “[...] a 10[%] increase in union density and a rise in union coverage [between] 25%-70% is associated with an increase of unemployment of just over 60% [...]”. However this can be compensated by coordination between unions and employers. Total tax rate, which include payroll taxes, income taxes and consumption taxes, seem to affect unemployment positively. The conclusion attained by Nickell is that LMIs, namely benefits and unions, should be eliminated or at least reduced significantly. Active labour market policies and synchronisation among business and unions are the key to have a low unemployment rate. However, many of the factors that seem to cause unemployment have gone away or they have not change much in recent decades: benefits are not much generous, labour markets are being deregulated and real interest rates are not high anymore, still unemployment persists.

### 1.2 Blanchard and Wolfers

The authors give three possible explanations to the rise in unemployment: First economics shocks such as oil prices, total factor productivity (TFP) growth, interest rates and shifts in

demand. Second the role of LMIs and third the interaction between the last two. They attain the following results

Table 1  
*Time Effects Interacted with Fixed Institutions*

	(1) Coefficients	(2) Range of independent variable		(3) Implied range of effect of shock (mean = 1)	
Time effects*	7.3%				
Replacement rate	0.017 (5.1)	-46.3	32.6	0.21	1.55
Benefit length	0.206 (4.9)	-2.0	1.6	0.60	1.33
Active labour policy	0.017 (3.0)	-47.2	9.5	0.20	1.16
Employment protection	0.045 (3.1)	-9.5	9.5	0.58	1.42
Tax wedge	0.018 (3.2)	-17.8	22.2	0.68	1.40
Union coverage	0.098 (0.6)	-1.7	0.3	0.83	1.03
Union density	0.009 (2.1)	-30.4	39.6	0.73	1.36
Coordination	0.304 (5.1)	-2.0	2.0	0.40	1.60
Country effects	yes				
$\bar{R}^2$	0.863				

\* Time effects: Estimated time effect for 1995+ minus estimated time effect for 1960-64. Column (1): regression results, t-statistics in parentheses. Number of observations: 159.

Table 1 captures the effect of the shocks in countries with different institutions. All of them, but active labour policies and coordination, lead to higher unemployment given the same shocks. For instance, a surge in interest rates would lead to a higher rate of unemployment in a country with more generous benefits.

Table 5  
*Shocks Interacted with Fixed Institutions*

	(1) Benchmark equation		(2) Institutions entered individually		(3) $u^*$ sacrifice ratio = 2.0	
TFP growth	0.71	(5.0)			0.58	(4.5)
Real rate	0.47	(5.1)			0.49	(5.7)
LD shift	0.19	(2.7)			0.15	(2.4)
<i>RR</i>	0.025	(3.7)	0.013	(2.4)	0.025	(3.7)
<i>Ben</i>	0.267	(3.0)	0.203	(2.3)	0.313	(3.3)
<i>ALMP</i>	0.028	(1.4)	-0.009	(-0.7)	0.033	(1.6)
<i>EP</i>	0.095	(2.7)	0.047	(2.7)	0.090	(2.6)
<i>Tax</i>	0.033	(2.4)	0.026	(2.6)	0.037	(2.6)
<i>Cov</i>	-0.501	(-1.1)	0.639	(3.0)	-0.466	(-1.0)
<i>Dens</i>	0.033	(3.2)	-0.002	(-0.3)	0.033	(2.8)
<i>Coor</i>	0.414	(2.9)	-0.039	(-0.4)	0.439	(2.9)
<i>CE</i>	yes		yes		yes	
$\bar{R}^2$	0.674				0.702	

Number of observations: 131.

In table 5, the authors allow for both institutions and shocks to interact. For instance, a rise in interest rates of 1% would cause unemployment to increase by 0.47 and also a fall in TFP growth of 3% means a hike in the unemployment rate of about 2%. When LMIs are entered individually, they reduce their effect on unemployment.

LMIs seem to be held accountable for increasing the effect of shocks on unemployment and they have a greater positive impact on thereof when they are putting into practice together, with the exception of union coverage.

### **1.3 Stockhammer and Klar**

Unemployment is explained by fluctuations in macroeconomic shocks, namely the rate of capital accumulation and the real interest rate. The model is constructed on a database including variables for LMIs. The authors add the rate of capital accumulation in the third column, which is the preferred specification.

By adding the input of capital accumulation the statics parameters improved considerably. An increment of 1% in that variable reduces the unemployment rate by 0.87%. They conclude that LMIs do not have a great impact on determining unemployment level. However UD and CBC seem to have a little effect. It is better therefore to focus the policies on augmenting the rate of capital accumulation, factor that is regarded as a promoter of aggregate demand.

**Table 2.** *Unemployment effects of labour market institutions (LMI), macro shocks (MS) and capital accumulation (ACCU): Bassanini and Duval dataset (1983–2003)*

	1		2		3		4		5		6	
	LMI only		LMI + MS		LMI + MS + ACCU		LMI + MS + ACCU		LMI + MS + ACCU		LMI + MS + ACCU	
							(no period effects)		(incl. ΔINFL)		(in differences)	
UB	0.08	<i>3.56</i>	0.02	<i>1.08</i>	0.01	<i>0.58</i>	0.02	<i>1.06</i>	0.02	<i>0.75</i>	-0.03	-1.00
BD	-0.47	-0.22	-1.15	-1.16	-1.09	-0.82	-0.03	-0.02	-1.08	-0.83	-2.35	-2.21**
EPL	-1.32	-0.98	-0.90	-1.35	-0.72	-1.05	-0.63	-1.05	-0.77	-1.12	-0.79	-1.20
UD	0.11	<i>1.83*</i>	0.14	<i>4.32***</i>	0.13	<i>4.01***</i>	0.09	<i>2.25**</i>	0.13	<i>4.14***</i>	0.09	<i>3.02***</i>
COORD	-0.72	-0.93	-0.44	-0.89	-0.77	-1.09	-1.25	-2.78**	-0.97	-1.35	-0.63	-0.71
CBC	-0.06	-5.06***	-0.04	-4.35***	-0.04	-4.16***	-0.03	-2.76***	-0.04	-4.32***	-0.05	-3.89***
TW	0.33	<i>3.73***</i>	0.14	<i>2.36**</i>	0.08	<i>1.18</i>	0.10	<i>1.61</i>	0.08	<i>1.27</i>	0.04	0.73
PMR	0.65	<i>1.22</i>	0.21	<i>0.46</i>	0.39	<i>0.94</i>	-0.13	-0.41	0.41	<i>1.00</i>	0.66	1.79
INT			0.74	<i>4.47***</i>	0.54	<i>3.02***</i>	0.55	<i>4.77***</i>	0.55	<i>2.99***</i>	0.22	1.62*
TOTS			0.21	<i>4.48***</i>	0.14	<i>2.27**</i>	0.06	<i>1.30</i>	0.13	<i>2.27**</i>	0.02	0.45
LDS			0.15	<i>2.22**</i>	0.11	<i>1.46</i>	0.12	<i>1.85*</i>	0.11	1.58	0.07	1.00
TFPS			-0.07	-0.63	0.01	<i>0.10</i>	0.06	<i>0.65</i>	0.00	0.02	0.09	1.59
ACCU					-0.87	-2.61**	-0.92	-3.31***	-0.87	-2.61**	-1.69	-7.03***
ΔINFL									0.14	<i>0.56</i>		
R <sup>2</sup> (adj.)	0.84		0.91		0.92		0.99		0.92		0.72	
n	100		93		93		93		93		73	
DW	1.77		2.65		2.18		2.16		2.22		1.74	

Notes:

Dependent variable: U; panel least squares; specifications 1–3 and 5: cross section and period fixed effects; White period standard errors & covariance (d.f. corrected); no weights (except specification 4: cross section weights, specification 6: period weights).

t-values in italics.

\*\*\*, \*\*, and \* denote statistical significance at the 1%, 5% and 10% level respectively.

Abbreviations as for Table 1, with the addition of: INFL, change in consumer price inflation; DW, Durbin Watson.

## 1.4 Common mistakes of the models

They used in their models what is known as cross-country datasets. According to Maddala (1999) this typology of data series tend to be untrustworthy. Maddala (1999, pg. 431) clearly states that “[...] when using panel data techniques, not all countries should be treated equally”. The authors pooled data from databases and they assumed homogeneity of the parameters in order to draw policy conclusions towards those countries, even though the inputs of the models such as LMIs, interest rates, and inflation vary from country to country. This feature renders the coefficients obtained less reliable as they are the outcome of a dataset which does not take into consideration differences among the nations involved. As Maddala (1999, pg. 432) indicates” [...] Policy conclusions for any country depend on more detailed analysis of that particular country”.

## 2. Study case: Spain

### 2.1 The data

The data was obtained from two reliable sources: OECD and AMECO databases. It ranges from 1987 to 2011.

Unemployment benefits are quantified as a percentage of GDP. Union density is the percentage of workers who are part of unions. Strictness measures the degree of employment protection and regulation. Gross capital formation is defined by the Eurostat as [...]”gross fixed capital formation, plus changes in inventories plus acquisition less disposal of valuables”. Tax on income is measured as a percentage of GDP. For real interest rates I used a long term specification with 2010 as a base year for the deflation. TFP stands for total factor productivity. The taxation on profits and wealth is measured as a share of GDP.

I used percentages of GDP in some inputs because this gives an indication of the weight they carry in the economy. All the inputs were converted into logs to give the model more linearity when interpreting coefficients.

### 2.2 The model

Primarily, I present a model generated with LMIs and macro shocks.

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Dependent Variable: LOG(UNEMPLOYMENT\_RATE/100)

Method: Least Squares

Sample: 1987 2011

Included observations: 23

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Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.308777	17.90045	0.520030	0.6106
LOG(UNEMPLOYMENT_BENEFITS_/100)	0.632799	0.176017	3.595113	0.0027
LOG(UNION_DENSITY/100)	-0.139337	0.458182	-0.304109	0.7652
LOG(STRICKNESS)	-0.682953	0.276198	-2.472695	0.0259
LOG(CAPITALFORM)	-0.605847	0.151091	-4.009810	0.0011
LOG(TAX_INCOME)	-0.996716	0.476368	-2.092326	0.0538
LOG(REAL_INTEREST_RATE/100)	0.075825	0.039737	1.908181	0.0757
LOG(TFP)	-0.659867	3.795776	-0.173842	0.8643

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R-squared	0.907667	Mean dependent var	-1.862457
Adjusted R-squared	0.864578	S.D. dependent var	0.279926
S.E. of regression	0.103012	Akaike info criterion	-1.439736
Sum squared resid	0.159172	Schwarz criterion	-1.044782
Log likelihood	24.55697	Hannan-Quinn criter.	-1.340407
F-statistic	21.06503	Durbin-Watson stat	1.732111
Prob(F-statistic)	0.000001		

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However, the model clearly suffers of autocorrelation. In order to make the model more robust, I add an input missed by the aforementioned authors: taxation on profits and wealth. The next section will explain the importance of this variable.

Dependent Variable: LOG(UNEMPLOYMENT\_RATE/100)  
 Method: Least Squares  
 Date: 02/28/15 Time: 11:51  
 Sample: 1987 2011  
 Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.181409	14.48602	0.288651	0.7774
LOG(UNEMPLOYMENT_BENEFITS_/100)	0.388093	0.161257	2.406669	0.0317
LOG(UNION_DENSITY/100)	-0.417942	0.366248	-1.141145	0.2744
LOG(STRICKNESS)	-0.434735	0.227257	-1.912965	0.0780
LOG(CAPITALFORM)	-0.465901	0.173270	-2.688876	0.0186
LOG(TAX_INCOME)	-0.448457	0.427431	-1.049192	0.3132
LOG(REAL_INTEREST_RATE/100)	0.057035	0.037725	1.511860	0.1545
LOG(TFP)	-0.430292	2.969306	-0.144913	0.8870
LOG(TAX_ON_PROFIT/100)	-0.531800	0.156905	-3.389309	0.0048
LOG(TAX_ON_WEALTH/100)	0.363100	0.328921	1.103915	0.2896
R-squared	0.951405	Mean dependent var	-1.862457	
Adjusted R-squared	0.917762	S.D. dependent var	0.279926	
S.E. of regression	0.080275	Akaike info criterion	-1.907708	
Sum squared resid	0.083772	Schwarz criterion	-1.414015	
Log likelihood	31.93864	Hannan-Quinn criter.	-1.783545	
F-statistic	28.27975	Durbin-Watson stat	1.972973	
Prob(F-statistic)	0.000000			

Tables generated whereby Eviews

Statistically speaking, the Adjusted R-squared increased and the DW test is closer to 2. Regarding the coefficients, the most important ones are marked. In the case of Spain, and contrary to Stockhammer, an increase of 1% in unemployment benefits affect unemployment positively by 0.38%. The reason is the idiosyncrasy of the Spanish labour market. As reported by Ferrer-i-Carbonell ET al (2013) Spain dedicates a large percentage to non-active labour policies in comparison to the rest of Europe.

Year	LM Support ("passive")			Active LM policies			LM Services		
	EU27	EU15	Spain	EU27	EU15	Spain	EU27	EU15	Spain
2004	n.a.	1.41	1.50	n.a.	0.60	0.55	n.a.	0.22	0.08
2005	1.27	1.32	1.46	0.51	0.53	0.58	0.22	0.23	0.09
2006	1.13	1.17	1.44	0.50	0.52	0.63	0.20	0.21	0.10
2007	0.95	1.00	1.46	0.46	0.48	0.63	0.19	0.20	0.09
2008	0.96	1.02	1.89	0.47	0.48	0.61	0.19	0.20	0.10
2009	1.40	1.47	2.98	0.54	0.55	0.65	0.24	0.25	0.13
2010	1.36	1.43	3.11	n.a.	n.a.	0.67	n.a.	n.a.	0.12

As a % of GDP

Although in the last years active LM policies have been increasing, LM services are much lower than in the rest of Europe. Moreover, LM support has skyrocketed recently, especially



from 2008 onwards, overshadowing any positive effects that the rest of policies could have accomplished. The following table clarifies the situation

	2004	2005	2006	2007	2008	2009	2010
<b>Labour market services</b>	3.59%	4.29%	4.37%	4.17%	3.98%	3.53%	3.18%
Training	5.74%	6.95%	6.68%	6.39%	5.72%	4.67%	4.60%
Job rotation & job sharing	0.39%	0.40%	0.34%	0.32%	0.33%	0.25%	0.29%
Employment incentives	12.83%	13.55%	14.53%	14.27%	10.19%	6.93%	6.51%
Supported employment and rehabilitation	1.49%	0.90%	0.98%	0.97%	0.95%	0.73%	0.89%
Direct job creation	3.79%	3.07%	2.82%	2.83%	2.52%	2.14%	1.99%
Start-up incentives	1.58%	2.38%	3.62%	4.04%	3.60%	2.63%	2.95%
<b>Total Active policies</b>	<b>25.82%</b>	<b>27.24%</b>	<b>28.97%</b>	<b>28.82%</b>	<b>23.31%</b>	<b>17.34%</b>	<b>17.23%</b>
Out-of-work income maintenance & support	68.86%	66.36%	64.17%	64.34%	70.17%	77.62%	78.54%
Early retirement	1.73%	2.10%	2.49%	2.67%	2.54%	1.51%	1.05%
<b>Total Passive Policies</b>	<b>70.59%</b>	<b>68.47%</b>	<b>66.66%</b>	<b>67.01%</b>	<b>72.71%</b>	<b>79.13%</b>	<b>79.59%</b>

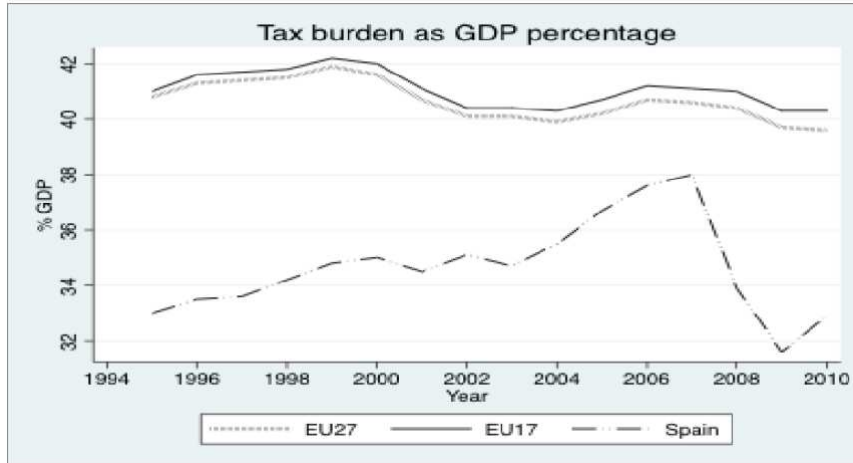
Almost 80% of the expenditure regarding labour market policies goes towards passive policies, instead of dedicate more to training, job creation and incentives and early retirement, factors which can improve the skills and make the labour force more employable. In this case, the recommendations given by Nickell concerning active labour policies (and market services) could be applied in Spain.

With respect to capital formation, I agree with Stockhammer in the sense that it reduces unemployment. The effect on Spain is however less than the one predicted by Stockhammer for the whole set of OECD nations. In my case of study 1% increase in capital formation can reduce it by 0.46%. According to La Fundacion BBVA (2013) since 2007 the rate of capital accumulation has decreased considerably, and acknowledges that in order to create more employment there should be change in the patters of capital accumulation, increasing its productivity in certain regions.

Taxation on profits seems to be the most important variable. An increase of 1% in profit taxation as a percentage of GDP reduces unemployment by 0.53. Tax on wealth does not have a special significant in the Spanish case. Taxes on incomes, unlike Nickell predicts, do not seem to have an impact on unemployment.

Many economists argue against tax hikes saying that it discourages investment and hamper the creation of jobs. Consequently light taxes should develop a more business-friendly environment. However, that is not the case of Spain. Ferrer-i-Carbonell ET all (2013) produce the following table





The total tax burden in Spain is much lower than in its European counterparts, yet the unemployment level is far worse than in the rest of the continent. So in Spain, a light tax system does not help to reduce unemployment as Nickell points out in his paper.

### 3. Taxation and income distribution

In order explain the persistence of unemployment in OECD countries many authors seem to have missed the increasing of the shadow economy since the 60's. Schneider and Williams (2013) produce the following table

Table 6 **Size of the shadow economy (% of official GDP) in 21 OECD countries**

OECD countries	Shadow economy (in % of official GDP)					2003	2005	2007	2009	2011	2012
	Average 1989/90	Average 1994/95	Average 1997/98	Average 1999	Average 2001						
1. Australia	10.1	13.5	14.0	14.4	14.3	13.9	13.7	13.5	n/a	n/a	n/a
2. Austria	6.9	8.6	9.0	10.0	9.7	9.8	9.8	9.5	8.5	8.0	7.6
3. Belgium	19.3	21.5	22.5	22.7	22.1	22.0	21.8	21.3	17.8	17.1	16.8
4. Canada	12.8	14.8	16.2	16.3	15.9	15.7	15.5	15.3	n/a	n/a	n/a
5. Denmark	10.8	17.8	18.3	18.4	18.0	18.0	17.6	16.9	14.3	13.8	13.4
6. Finland	13.4	18.2	18.9	18.4	17.9	17.7	17.4	17.0	14.2	13.7	13.3
7. France	9.0	14.5	14.9	15.7	15.0	15.0	14.8	14.7	11.6	11.0	10.8
8. Germany	11.8	13.5	14.9	16.4	15.9	16.3	16.0	15.3	14.6	13.7	13.3
9. Greece	22.6	28.6	29.0	28.5	28.2	27.4	26.9	26.5	25.0	24.3	24.0
10. Ireland	11.0	15.4	16.2	16.1	15.9	16.0	15.6	15.4	13.1	12.8	12.7
11. Italy	22.8	26.0	27.1	27.8	26.7	27.0	27.1	26.8	22.0	21.2	21.6
12. Japan	8.8	10.6	11.1	11.4	11.2	11.2	10.7	10.3	n/a	n/a	n/a
13. Netherlands	11.9	13.7	13.5	13.3	13.1	13.3	13.2	13.0	10.2	9.8	9.5
14. New Zealand	9.2	11.3	11.9	13.0	12.6	12.2	12.1	12.0	n/a	n/a	n/a
15. Norway	14.8	18.2	19.6	19.2	19.0	19.0	18.5	18.0	n/a	n/a	n/a
16. Portugal	15.9	22.1	23.1	23.0	22.6	23.0	23.3	23.0	19.5	19.4	19.4
17. Spain	16.1	22.4	23.1	23.0	22.4	22.4	22.4	22.2	19.5	19.2	19.2
18. Sweden	15.8	19.5	19.9	19.6	19.1	18.7	18.6	17.9	15.4	14.7	14.3
19. Switzerland	6.7	7.8	8.1	8.8	8.6	8.8	8.5	8.1	n/a	n/a	n/a
20. UK	9.6	12.5	13.0	12.8	12.6	12.5	12.4	12.2	10.9	11.0	10.3
21. USA	6.7	8.8	8.9	8.8	8.8	8.7	8.5	8.4	n/a	n/a	n/a
Unweighted average for 21 OECD countries	12.67	16.16	16.82	17.03	16.65	16.6	16.4	16.06	n/a	n/a	n/a

The shadow economy has been increasing steadily through the 80's and 90's in OCDE countries. In the case of Spain, it has dwindled since 2007, but still is higher than in the 80's. It is not coincidence that Italy, Greece, Spain and Portugal, whose unemployment rates are the highest in Europe, also have the largest shadow economies. This also could mislead unemployment rates and possibly those out of job are not as many if the shadow economy is taken into consideration.

By definition, it implies tax evasion, an issue that cost the EU alone around €1trillion every year (Lamberts, 2014; European Commission, 2015) According to Krugman (1994), setting a minimal wage increases the relative cost of low-skilled labour. In two articles, The Financial times (2014) briefly outline the history of the Spanish labour market and its deficiencies, pointing out that around 9, 00,000 people below 30 years have just basic education or not education at all. The huge number of unskilled labour with mainly experience in the construction sector, a poor education system in comparison with European levels and a relative high minimal wage, make their employability very difficult.

According to the Financial Times (2014) the current government is doing very little to incentivise the retraining of young low skilled workers. The figure that escapes the hands of the Spanish taxman could therefore be used to fulfil the skills demanded by businesses through training and employment incentives. Government expenditure to fill the gap left by lack of activity on behalf the private sector in order to boost aggregate demand could be also in the agenda (Richard, 2011), but the Spanish establishment is doing just the opposite.

### **3.2 Income distribution and middle class**

The purpose of a taxation system is to redistribute income in order to make our society more egalitarian. According to the OECD (2011), the gap between rich and poor has been widening in the last 30 years. This polarisation of the wealth is harming the middle class as The Telegraph (2012) and BBC news (2012) recognise. They point out that the current crisis is eroding their purchasing power. This is clearly damaging the aggregate demand, as families, for example in Spain, consume less as their income shrinks. As Davison (1998), Boushey and Hersh (2012) indicate, investment is based on future demand for goods and services. As demand shrinks, so do the investment and the employment the former generates. Governments, through a well-constructed taxation system should reduce inequality and channel economic growth whereby a powerful middle class. In consonance with Boushey and Hersh (2012) a powerful middle class creates strong demand for goods and services and generate investment, which are the main drivers of economic growth and employment.

### **4. Policy recommendations**

The shadow economy has increased dramatically across OECD nations and is maiming governments' ability to redistribute income and make our society more egalitarian. This trend is polarising the wealth on a few people, widening the gap between poor and rich, hampering the access to education as a consequence of increasing poverty and therefore making more difficult to satisfy the demands of the current labour market (Alonso, 2014). This leaves a constant pool of unskilled labour which drags the labour market down. The case of each country should be studied individually.

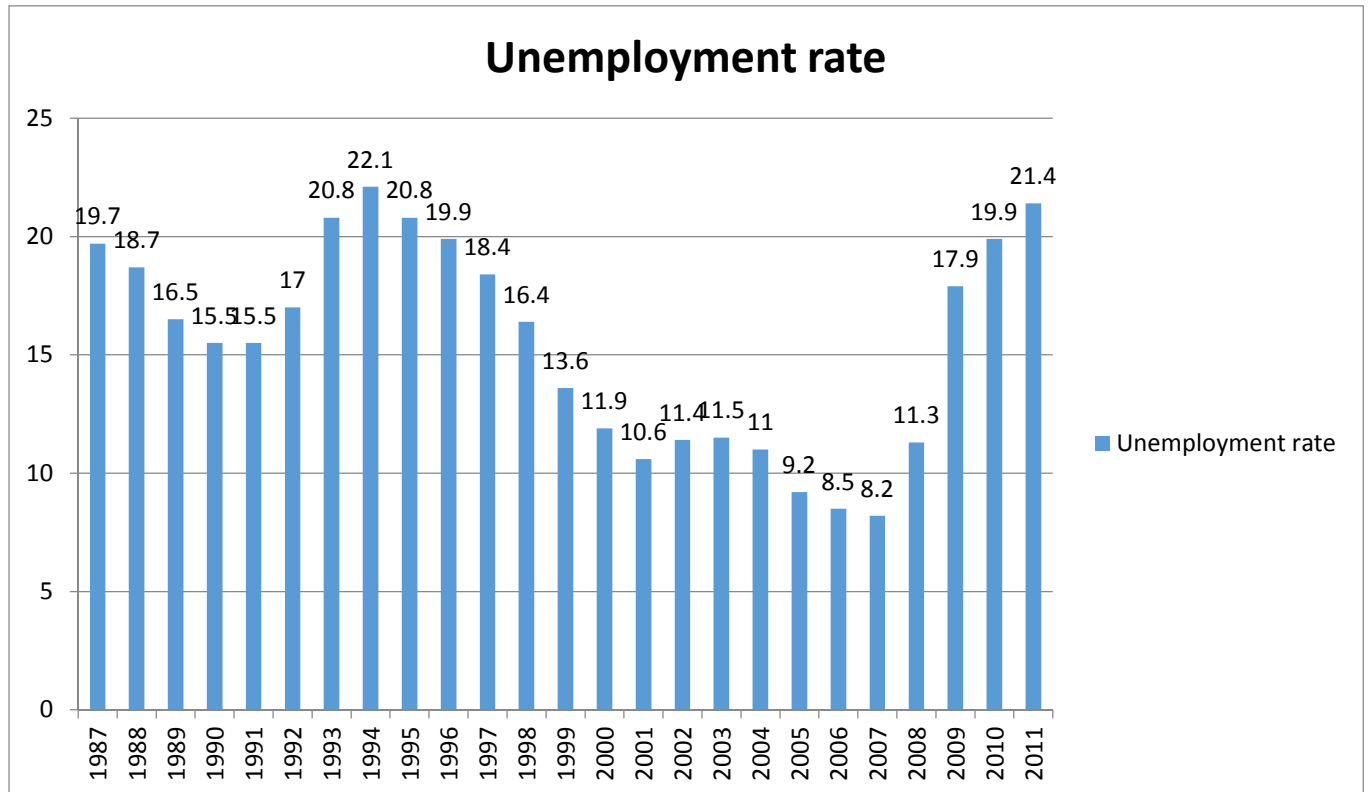
In the case of Spain, unemployment benefits should be curtailed drastically and the funds should be invested in active labour market policies as well as boosting and reform the patterns of capital formation. Regarding taxation, the government should crack down on dodging activities, improve transparency and closing loopholes (Lamberts, 2014). A better

redistribution of income to boost demand and qualified employees to strengthen the labour market could be the solution to reduce unemployment in Spain, but it is not an easy task.

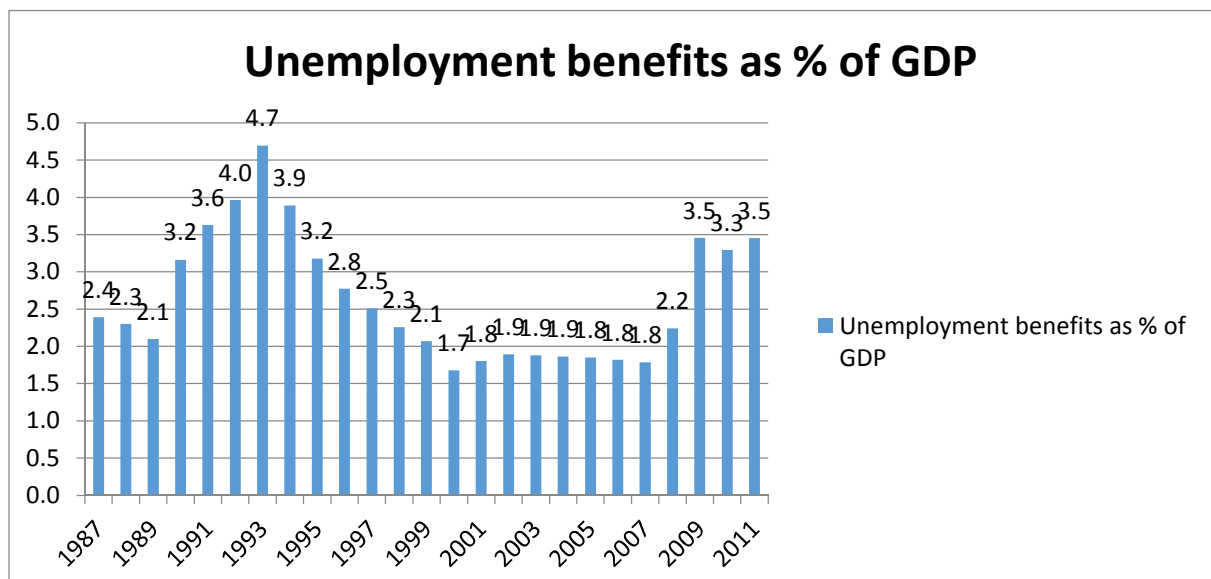
Number of words until the conclusion: 2197. (2000+10%)

## 5. Appendix

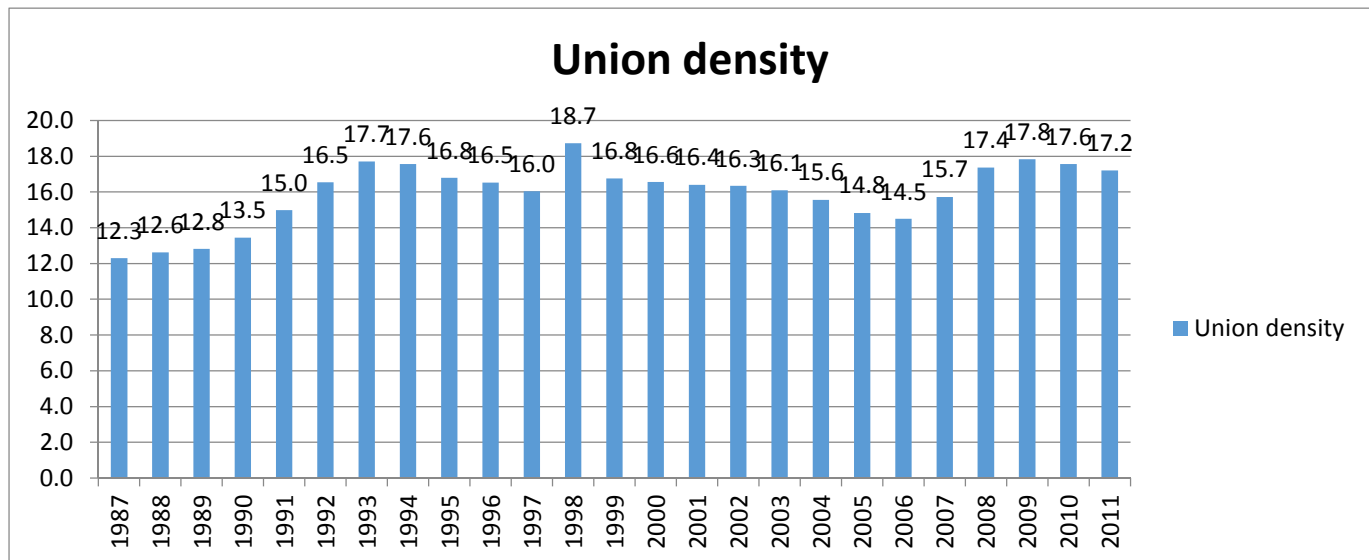
### 5.1 Unemployment rate



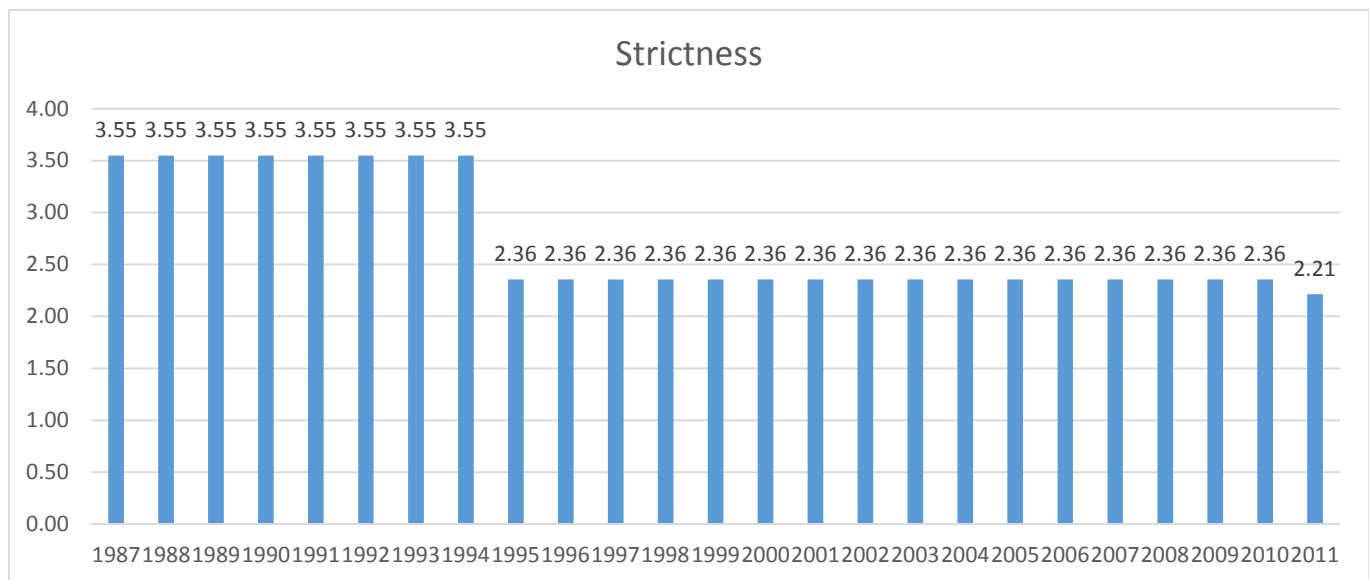
### 5.2 Unemployment benefits



### 5.3 Union density

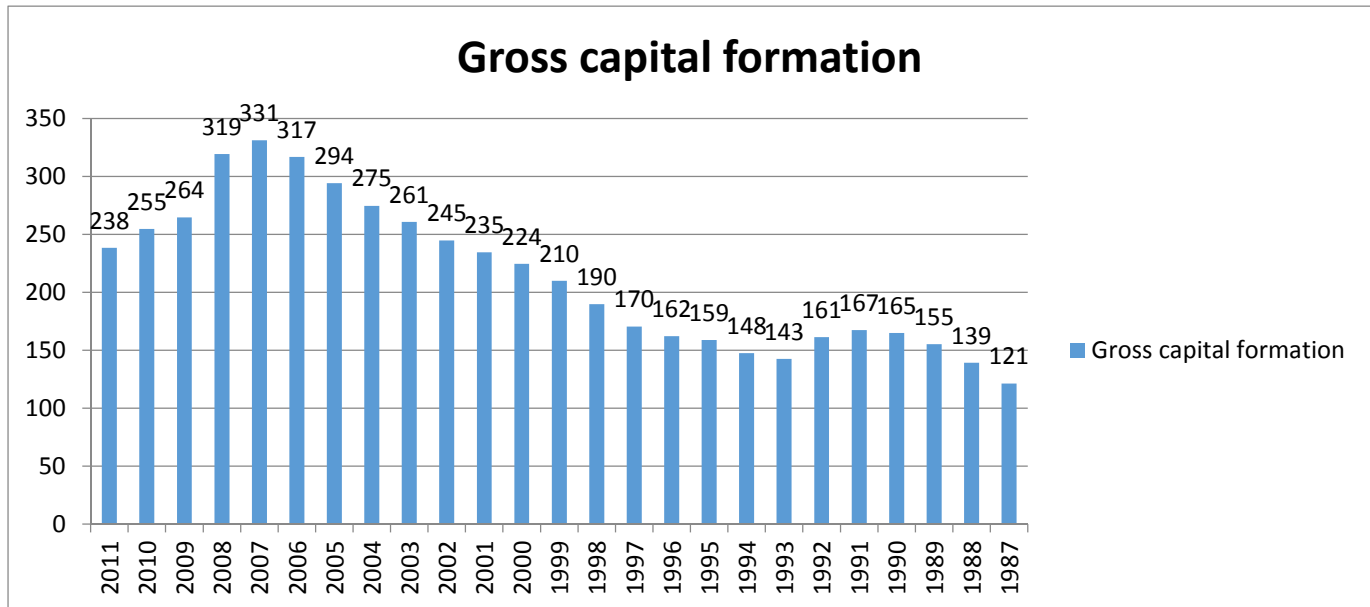


### 5.4 Strictness



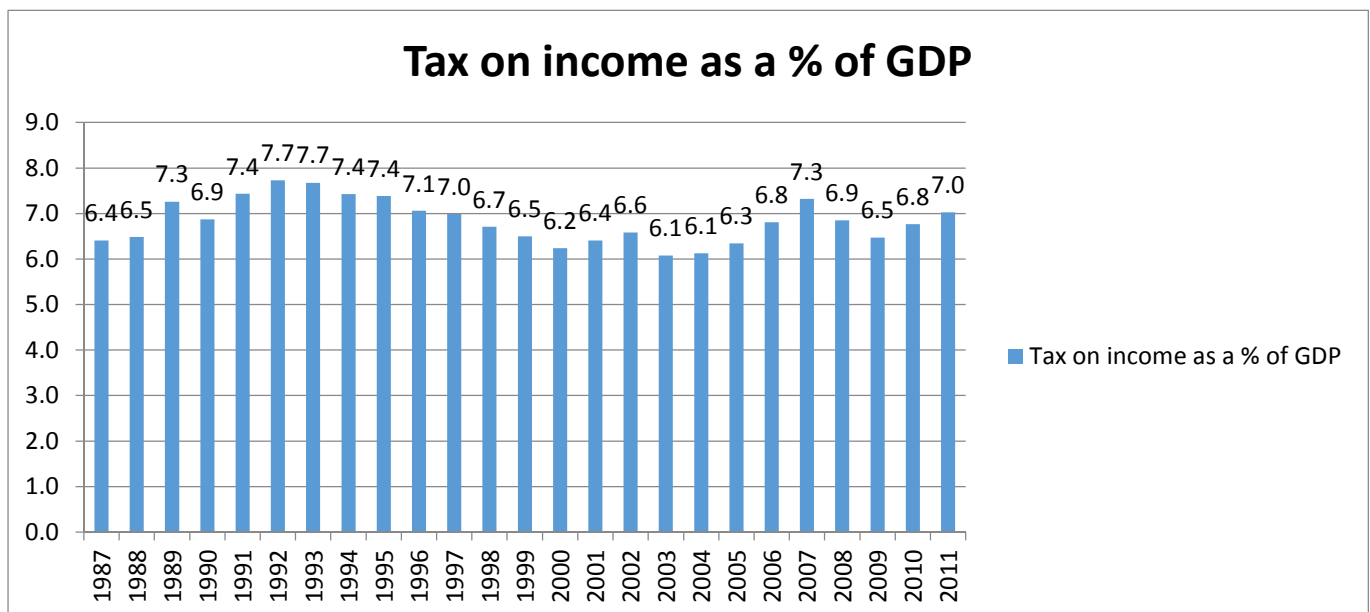
Some decimals have been removed in order to have a readable graph. For the exact figures, please go to [http://stats.oecd.org/Index.aspx?DataSetCode=EPL\\_OV](http://stats.oecd.org/Index.aspx?DataSetCode=EPL_OV)

## 5.5 Capital formation



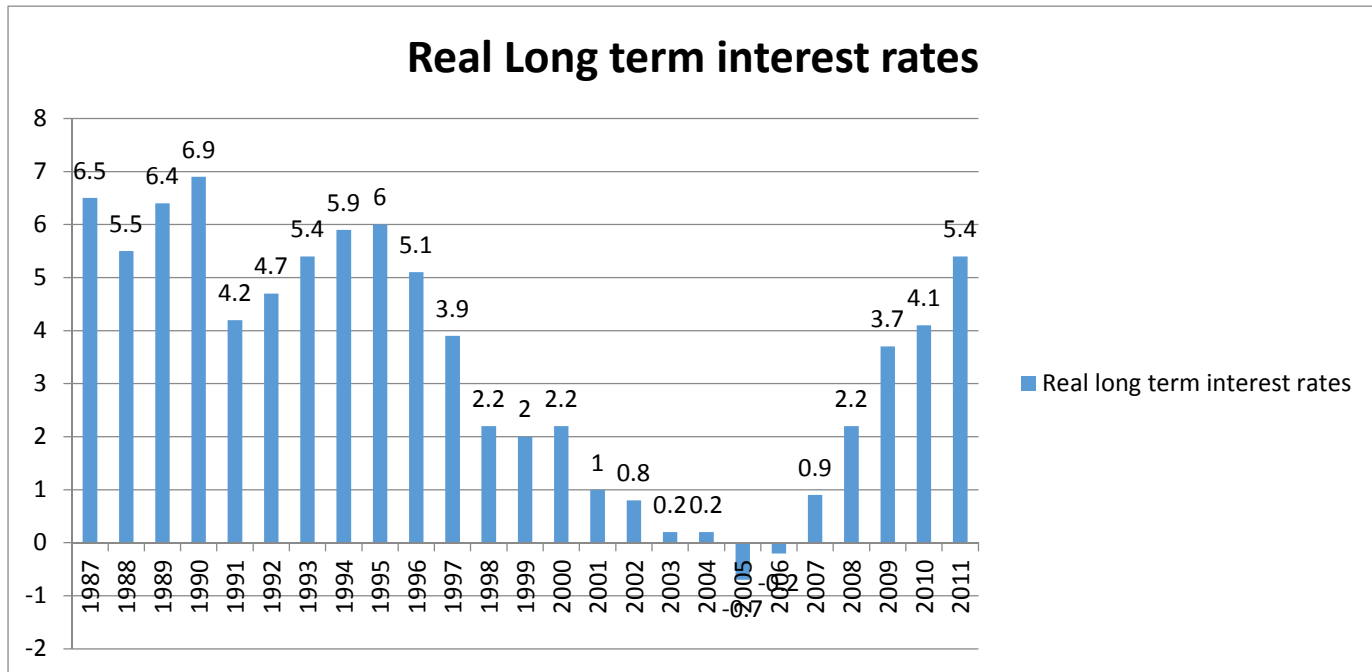
Some decimals have been removed in order to have a readable graph. For the exact figures, please go to [http://ec.europa.eu/economy\\_finance/ameco/user/serie/ResultSerie.cfm](http://ec.europa.eu/economy_finance/ameco/user/serie/ResultSerie.cfm)

## 5.6 Tax income

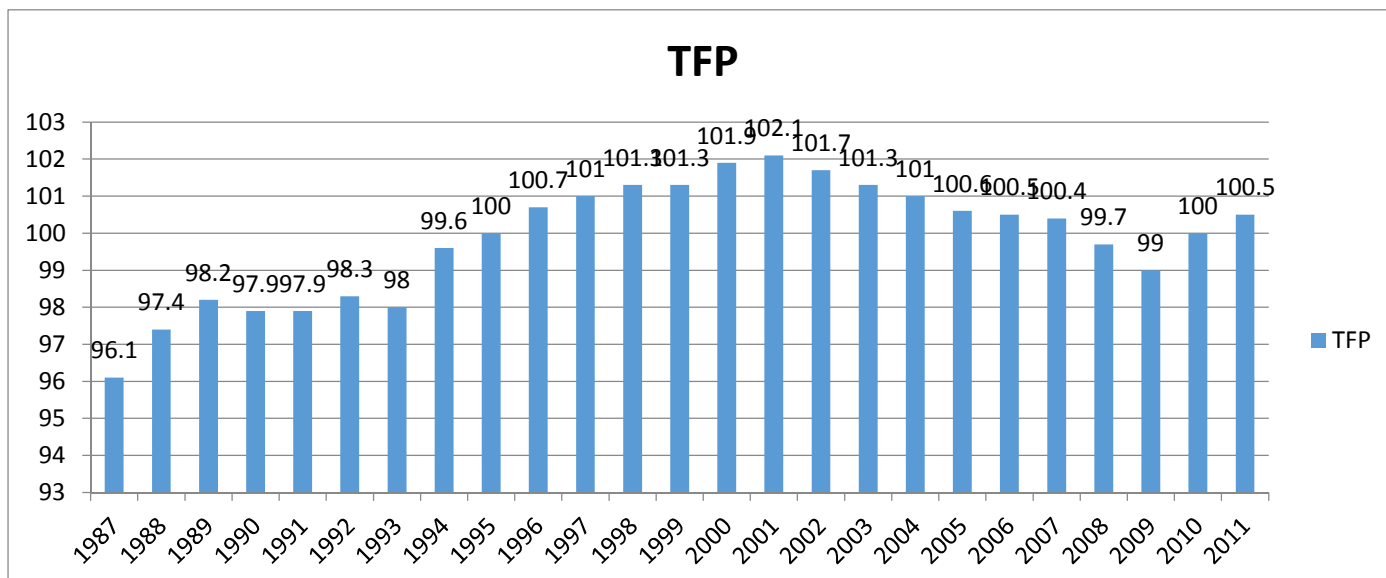




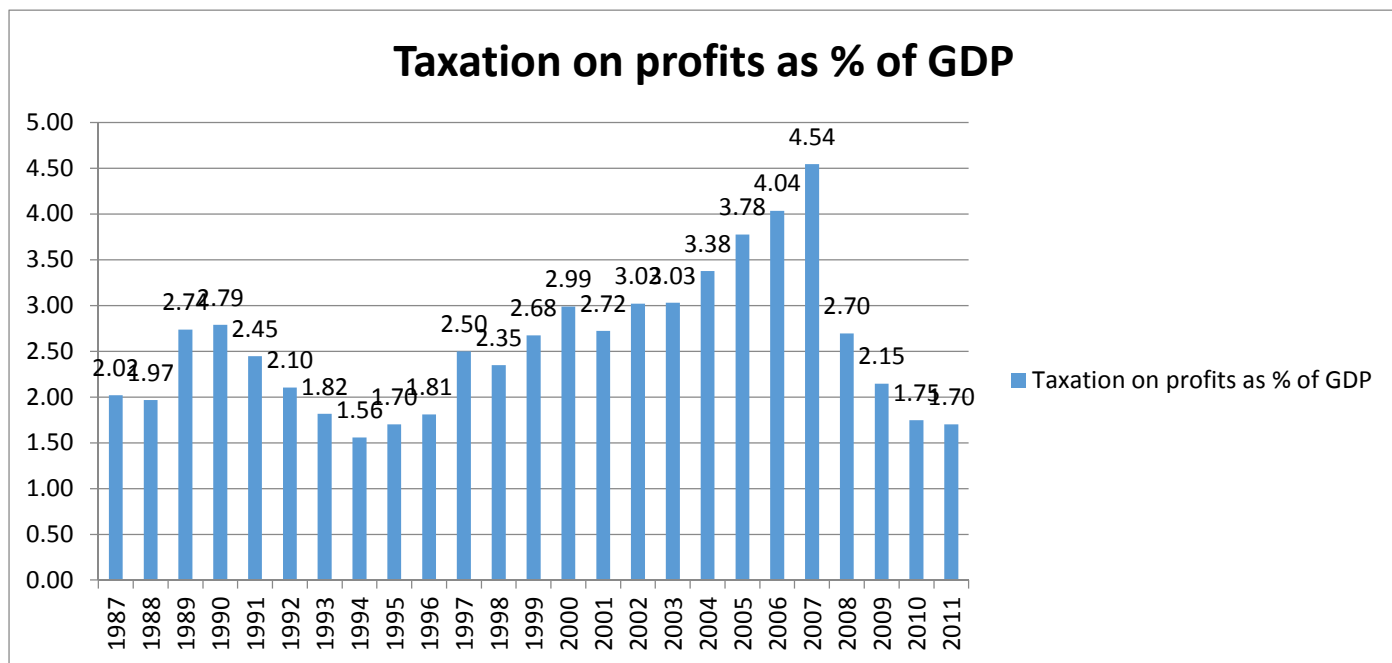
### 5.7 Real long term Interest rates



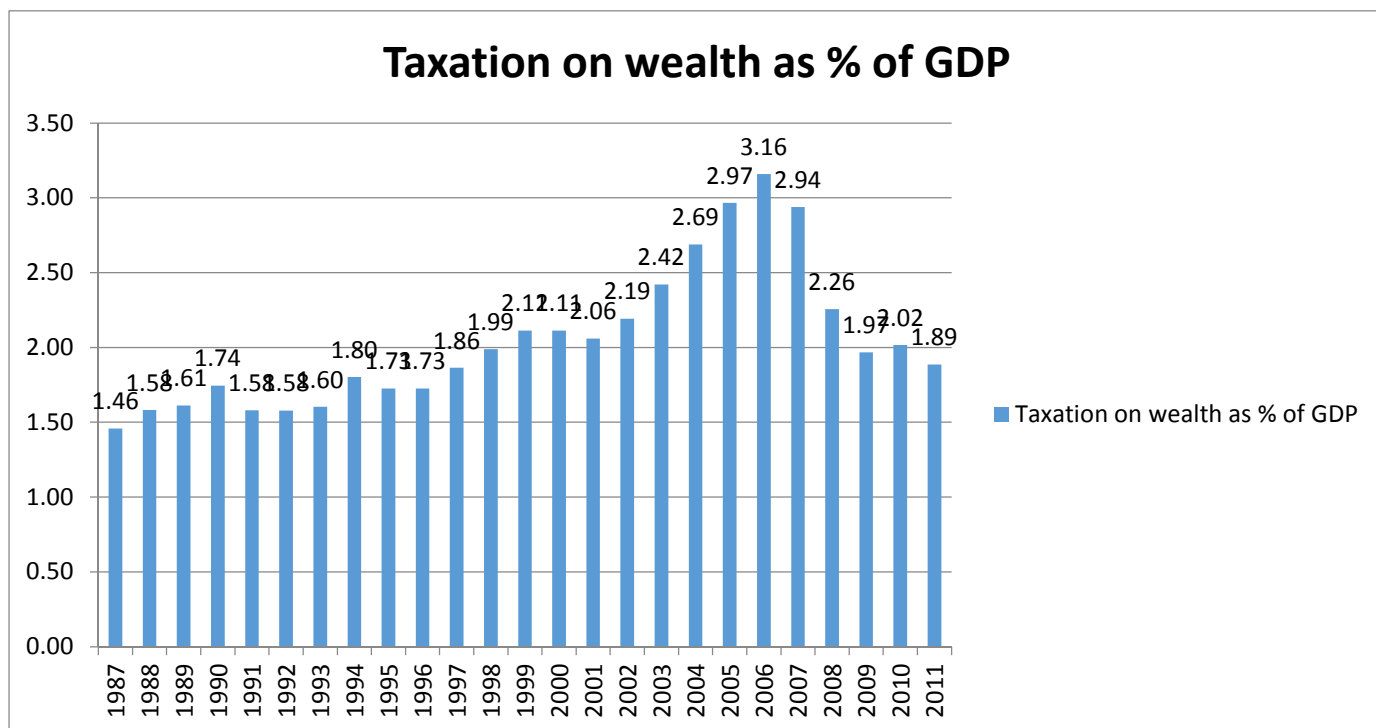
### 5.8 Total factor productivity (TFP)



## 5.9 Taxation on profits



## 5.10 Taxation on wealth (property and land)



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