INDEX

This thesis is divided into four sections. The first section presents briefly the subject and the reasons and boundaries of the study. The second section contains the literary review of the variables under examination and sets the theoretical framework underlying the study and the methodological issues related to the STATA model. The empirical results of the STATA analysis are shown in the third section. The fourth section draws conclusions and recommendations from the analysis. The bibliography is at the end of the four sections.

SECTION 1: SUBJECT OF THIS THESIS

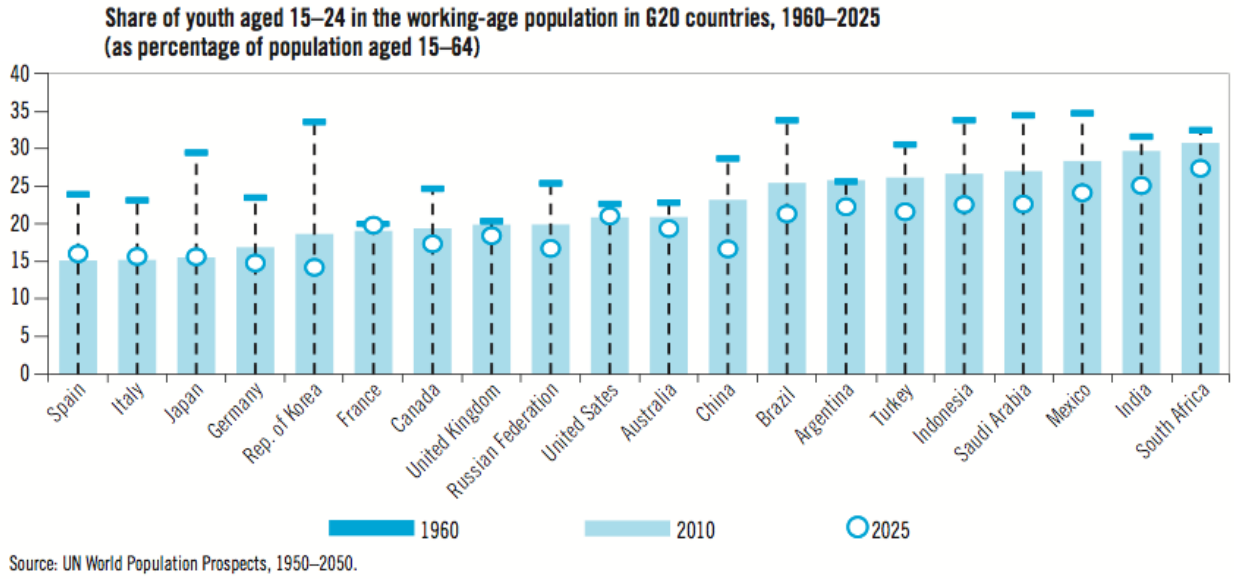
In many countries, youth is facing high and persistent unemployment or poor quality jobs. Unemployment implications , especially when the problem is persistent and has its roots in youth lacking basic education , can go far beyond the economic aspects and lead to psychological and health problems. In aggregate , these individual problems that can take the form of social problems. As an example loss of job by middle aged men seems a component of violence on women, while lack of opportunity for the youngsters in economically depressed areas feds the ranks of organized crime.

This phenomenon is particularly serious not only for ethical reasons, but also because youth has been always an asset for the economic development of a country and it will be so even more in the economies where retirement protection of the elder in the context of rapid population ageing, is a key element of social cohesion and pension funds are largely sustained by the contribution of the younger. Therefore, successful engagement of the young in the labor market is crucial not only for improving their own employment prospects and well-being, but also for strengthening overall economic growth, equality and social cohesion and in many countries, the immediate short-term challenge is to tackle a sharp increase in youth unemployment (OECD 2013).

Today there is an increasing disproportion between young people employed and adults employed. Although youth makes up approximately 40% of the total unemployment worldwide **(ILO 2011)1** it is only one quarter of total working age population (ages 15 and over). All together, even before the crisis an upward

trend in youth unemployment can be found in most countries and therefore it is not only a result of cyclical episodes such as the financial/economic crisis. Nowadays the global youth unemployment rate has reached 13.1% **(ILO, 2014).2** Furthermore, there is a declining quantity of young people in the working age population in the last fifty years as we can see from **Figure 1**. In most countries the share of youth on total working age population declined significantly (and in Germany and developing economies it will continue to decline) while it remained almost constant in US, UK, Australia and France where higher immigration rates compensated for the population aging. This could be partially justified by extended education but the point of view that the decline in youth labor force participation rates is a side effect of longer education terms **(ILO 2008)6** is contradicted by other findings , such as the NEET figures that we shall see later.

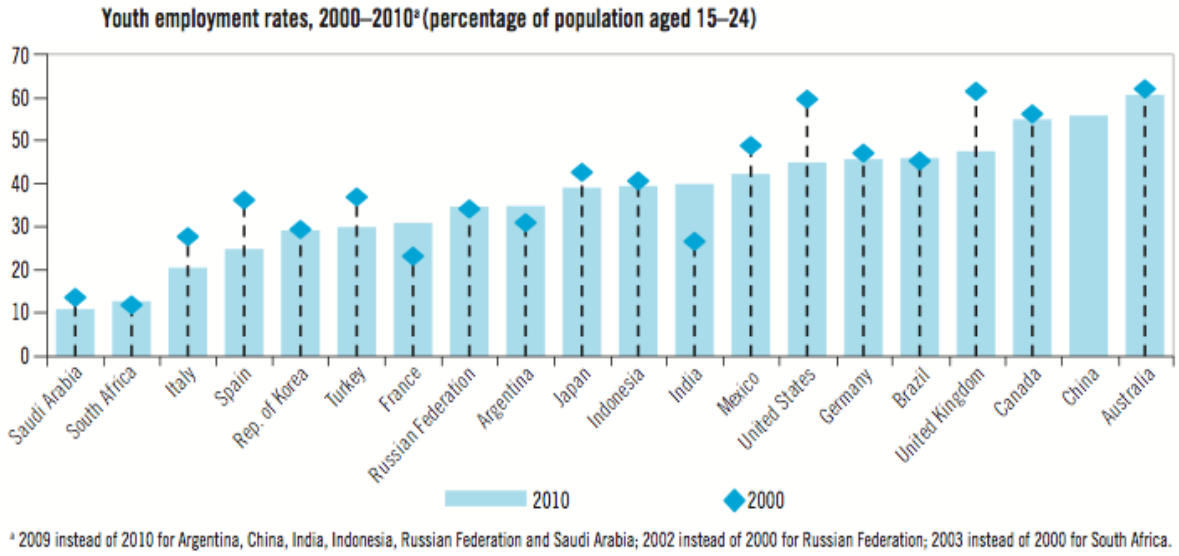
Figure 1



Source : UN World Population Prospects, 1950-2050

Following the previous point , one could believe that smaller youth cohorts could facilitate their employability and reduce YUR. This belief is false as inferred by the comparison between the preceding **Figure 1** and the following **Figure 2**.

Figure 2



Source : UN World Population Prospects, 1950-2050

The worst declines in youth employment rates are both in countries where a significant shrinking of the youth cohort took place , such as Italy and Spain , and in countries where the shrink in the youth cohort did not take place , such as US and UK. In most G 20 countries youth employability declined or remained stable with the sole exception of France where the YUR has always remained pretty stable notwithstanding the increased youth cohort.

All this confirms that shrinking youth cohorts does not automatically lead to a better employment rate of the youth which, instead, is somehow linked to the employment rate of the older workforce as shown by **Figures 3 and 4** below, where any increase in the youth employability is strictly tied to an (often larger)

increase in the adult employability with no exceptions. While YUR increases only but not always when UR increases and decreases always when UR decreases, the reverse is not always true.

Figure 3

employability as a percentage of population, age 25-29

Country	2005	2006	2007	2008	2009	2010	2011	2012	2013
Australia	78,59	79,11	80,18	80,23	77,96	78,28	79,76	78,33	78,06
Austria	80,55	80,49	80,56	80,80	80,77	80,46	81,33	82,53	81,44
Belgium	79,15	78,70	79,40	80,09	78,96	77,46	76,85	75,91	75,05
Canada	79,80	80,61	80,61	80,92	78,72	78,97	78,40	79,54	78,47
Denmark	78,48	80,98	81,47	83,35	78,09	73,98	73,23	71,76	72,82
Finland	76,81	77,58	78,31	79,53	75,44	75,36	75,43	74,93	74,49
France	77,32	78,14	78,11	78,83	77,16	76,81	75,96	74,86	74,61
Germany	69,83	71,75	73,39	74,76	74,62	75,57	77,45	77,57	77,56
Greece	71,54	72,90	72,43	73,05	72,01	68,16	59,78	53,62	48,49
Ireland	82,24	83,12	83,27	80,74	72,44	69,62	67,33	67,23	69,10
Italy	63,26	64,96	64,33	64,35	61,23	58,85	58,82	57,33	52,79
Luxembourg	81,32	80,22	80,31	74,37	80,19	81,52	79,80	78,66	75,98
Netherlands	83,38	84,86	86,59	87,21	86,21	84,79	84,19	83,40	81,68
Portugal	78,06	77,88	77,16	78,56	77,29	74,54	74,31	71,14	68,01
Spain	76,06	77,50	78,56	75,23	68,01	65,63	63,92	59,75	58,08
Sweden	76,85	78,13	80,02	80,51	77,21	76,04	77,83	77,19	77,50
United Kingdom	79,23	79,77	80,11	80,47	76,88	77,82	77,17	76,75	77,58
United States	77,58	78,65	78,84	77,69	73,37	73,07	72,82	74,04	74,04

Source : data extracted on 05 Sep 2014 06:39 UTC (GMT) from OECD.Stat

Figure 4

employability as a percentage of population, age 15-24

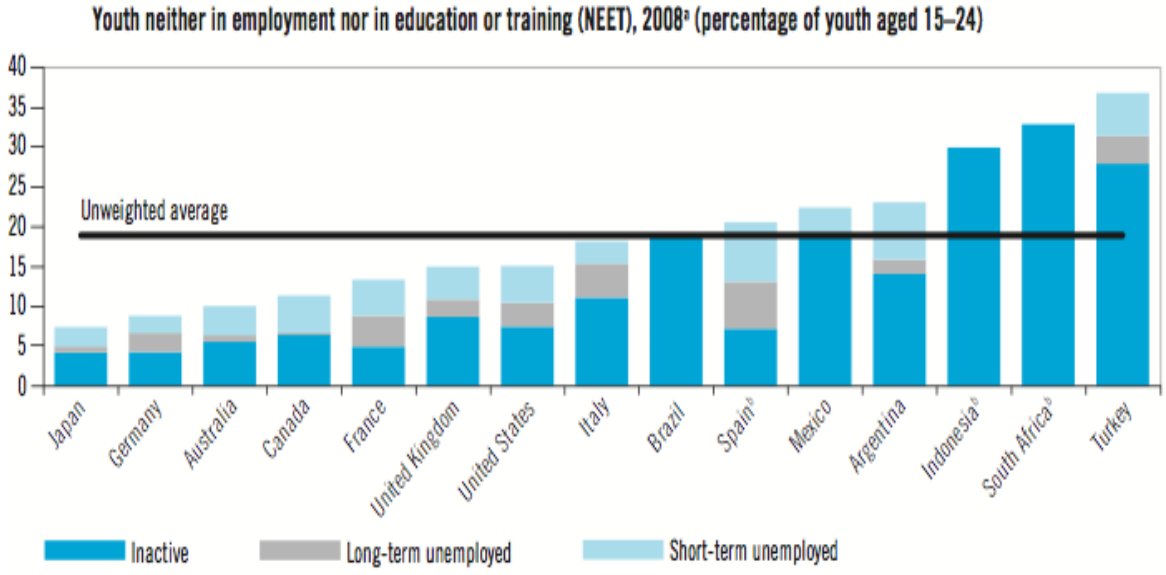
Country	2005	2006	2007	2008	2009	2010	2011	2012	2013
Australia	63,29	63,70	64,13	64,51	61,18	60,52	60,39	59,60	58,68
Austria	53,06	54,04	55,53	55,87	54,48	53,64	54,92	54,64	53,85
Belgium	27,49	27,58	27,49	27,40	25,32	25,23	25,99	25,26	23,64
Canada	57,66	58,47	59,46	59,71	55,50	54,95	55,42	54,48	55,07
Denmark	62,27	64,57	65,30	66,36	62,52	58,07	57,54	55,00	53,67
Finland	42,11	44,14	46,35	46,43	38,54	40,45	42,34	43,33	40,18
France	30,22	29,83	31,05	31,30	30,34	29,98	29,53	28,40	28,59
Germany	42,57	44,01	45,94	47,19	46,55	46,81	48,19	46,63	46,83
Greece	24,97	24,24	23,98	23,55	22,94	20,35	16,26	13,06	11,85
Ireland	47,84	49,34	50,41	47,34	37,46	31,93	29,44	27,90	28,82
Italy	25,46	25,48	24,66	24,35	23,94	22,58	21,39	20,47	18,02
Luxembourg	24,89	23,32	22,47	23,84	26,73	21,21	20,70	21,75	21,88
Netherlands	61,69	62,83	65,47	66,75	65,30	63,01	63,55	63,32	62,33
Portugal	35,29	34,79	34,42	34,07	30,84	27,91	26,60	23,02	21,67
Spain	42,11	43,28	43,01	39,62	30,80	27,43	24,19	20,25	18,56
Sweden	43,30	44,77	42,07	42,03	38,15	38,64	40,81	40,04	41,54
United Kingdom	58,74	57,65	56,45	56,32	51,86	50,69	50,14	50,02	48,82
United States	53,91	54,25	53,13	51,23	46,85	45,00	45,45	45,98	46,49

Source : data extracted on 05 Sep 2014 06:39 UTC (GMT) from OECD.Stat

Moreover, where the difficulty of accessing the labor market is coupled with high rates of youth not completing even secondary education and with lack of vocational training programs, people fall in an even worse status of “neither in employment or education or training.” Even before the crisis , persistence in the NEET rates was a common result in empirical studies, at least for countries in Southern Europe (**Quintini et al., 2007).7** The NEET group is even a greater issue for society since it leads to the risk, especially in certain depressed areas , of driving a portion of the young people towards organized crime as the only real chance. According to some researchers the size of the group of “youth left behind” can be better proxied by the NEET indicator rather than YUR **(Bruno, 2013)5**. This seems especially true in less developed growing economies. As we can infer from the **Figure 5** below , the NEET situation is extremely serious in developing countries , where both the absolute figures are very large and the portion of inactive is by far the largest. For instance Spain and Brazil are both around 20% NEET but the Spanish situation is much better because only half of

the NEET are inactive. Under this respect Italy is in a worst situation than Spain , as inactive NEET are higher , and as we know from various sources , they are mostly youngsters geographically concentrated in the South and exposed to criminal contamination.

Figure 5



[a] Data for Indonesia refer to 2007; for Japan and South Africa to 2008.

[b] Data refer to total NEET rate.

Source: OECD, Education database for OECD countries and Brazil; Encuesta Permanente de Hogares (EPH) for Argentina; Indonesia Family Life Survey, fourth wave for Indonesia; General Household Survey for South Africa.

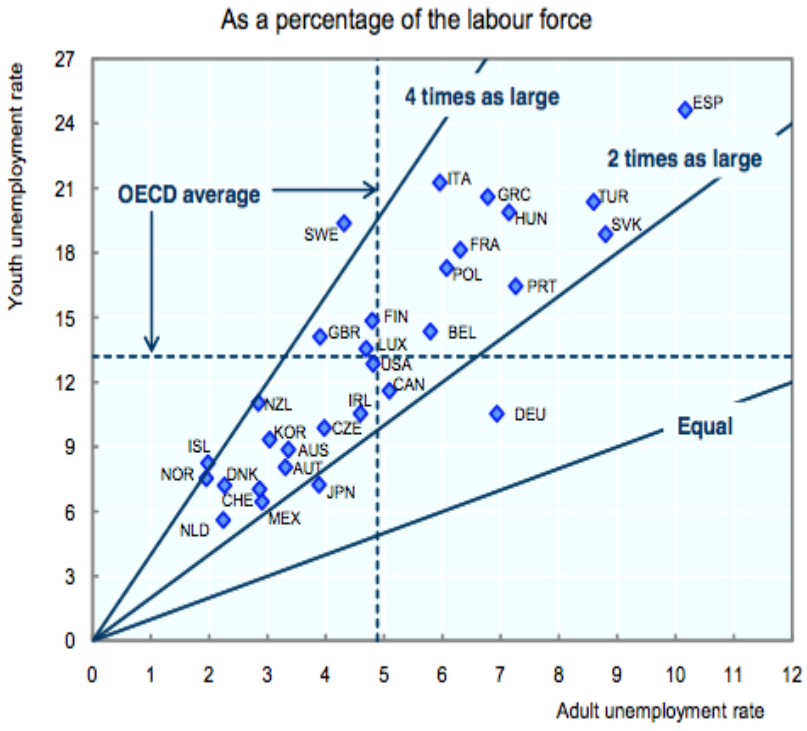
Young people were badly hit by the recent financial and economic crisis , much more than adults. The macro shocks due to financial/ economic crisis affect YUR much more than AUR. While both total unemployment rate (UR) and youth unemployment rate (YUR) have increased in many countries after the global financial crisis (2008), and the following recession in some countries , youth was hit worst in major G20 countries. This is inferred from the employment figures of the two age groups shown in **Figures 3 and 4** above comparing the figures of 2008-2009-2010. Immediately after the 2008 financial crisis the 2009 Youth Employment Rate fell heavily everywhere , while the Adults Employment Rate remained almost stable with the exception of US , Canada and UK where labor protection laws are not so strict. YUR are clearly more sensitive to the business cycl ι

older workers) and weaker work contracts are always weaknesses of the young but they are particularly detrimental in an economic downturn where firms have to take harsh dismissal decisions.

Under almost all circumstances and in all countries , from the labor standpoint , adults are far better off than youth. However , the financial global crisis and the follow on recession in many countries are both a problem and an opportunity. They give us the absolute need and also the observations to look at some issues which are more interesting because they can lead to non obvious future decisions, since there is probably no recipe that works for all countries , but there is also no recipe that can suggest that the problem of the youth can be solved separately from the general economic strategy of a country. We therefore need to analyze in depth the YUR determinants , both structural and cyclical , and their interactions in order to identify which policy mix is more suitable for each country.

We will concentrate our analysis on Europe (EU countries) plus USA , Canada and Australia. The country by country analysis is necessary even within the EU, since there is a clear differential between Nordic countries, where the gap between youth and total unemployment rates (YUR and TUR) is relatively small, and the Southern countries, where the latter is much more stressed. The youth unemployment rate (YUR) is in most countries at least twice as high as the adult unemployment rate (AUR) as we can see from **Figure 6** below.

Figure 6



How to read the figure? All countries above the "Equal" line have a higher youth unemployment rate than that of adults. For example in Sweden, youth have an unemployment rate that is more than four times that of adults compared with three times in Greece and twice in Japan.

Source: National labour force surveys.

We will find and analyze evidence on youth labor market dynamics and compare different countries, trying to understand the determinants of the youth unemployment rate (YUR) and the effects on YUR of different economic policies. We will base our research largely on data from the Organization for Economic Cooperation and Development (OECD) , which is participated by 34 countries , mostly high income developed economies , with the aim of supporting economic growth through the identification and sharing of best practices within the participating countries. Italy is one of the 20 founding members since 1960 when OECD superseded the pre existing Organization for European Economic Cooperation (OEEC).

The following **Figure 7 and Figure 8** show the evolution of YUR in various countries historically over thirty years and the most recent situation , six years after the global financial crisis.

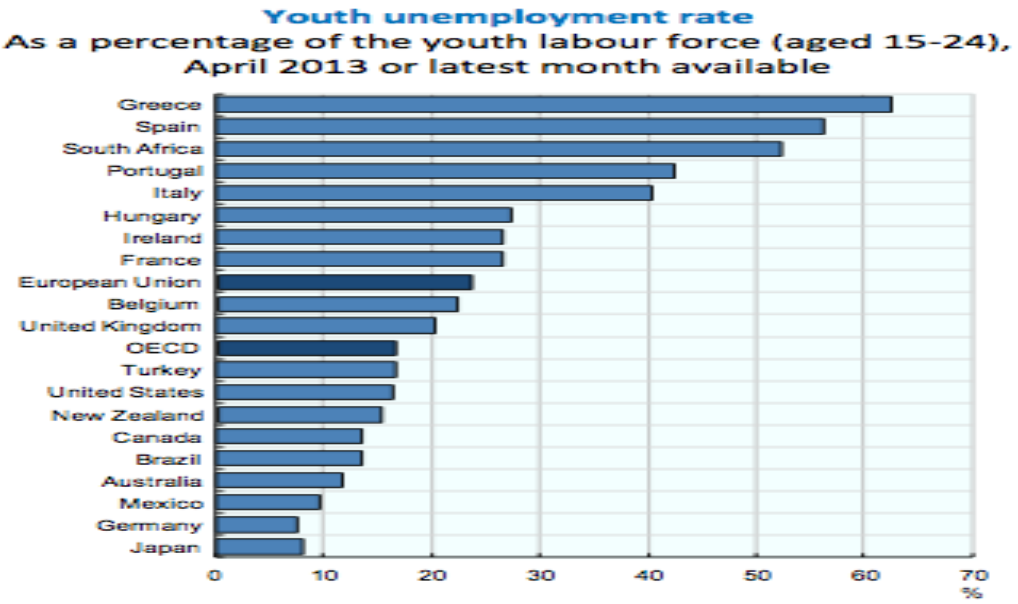
Figure 7

Table 2: Trends in Youth Unemployment Rate

	1980	1985	1990	1995	2000	2005	2010
Australia	12.5	15.2	13.0	15.4	12.1	10.6	11.5
Austria		4.3	3.8	5.2	5.1	10.3	8.8
Belgium		23.5	14.5	21.5	15.2	21.5	22.4
Canada	12.8	16.1	12.3	14.8	12.7	12.4	14.8
Czech Republic				7.8	17.0	19.3	18.3
Denmark		11.5	11.5	9.9	6.7	8.6	13.8
Finland	8.8	9.7	8.9	27.0	20.3	18.9	20.3
France		25.7	19.8	27.1	20.6	20.3	22.5
Germany				8.2	8.4	15.2	9.7
Greece	13.8	24.2	23.3	27.9	29.5	26.0	32.9
Hungary				18.6	12.7	19.4	26.6
Iceland				11.0	4.7	7.2	16.2
Ireland		25.0	19.7	19.0	6.5	8.6	27.5
Italy	25.0	32.1	28.9	33.5	31.5	24.0	27.8
Japan	3.6	4.8	4.3	6.1	9.2	8.7	9.2
Korea, Republic of	11.5	10.0	7.0	6.3	10.8	10.2	9.8
Luxembourg		6.7	3.6	7.2	6.4	13.7	14.2
Netherlands		17.6	11.1	12.1	5.3	8.2	8.7
New Zealand			14.1	12.3	13.6	9.7	17.1
Norway	4.7	6.5	11.8	11.9	10.2	12.0	9.3
Portugal	16.4	19.0	9.6	15.7	8.6	16.1	22.3
Slovakia				24.8	37.0	29.9	33.6
Spain	25.3	43.8	30.2	40.4	25.3	19.7	41.6
Sweden	6.3	7.2	4.6	19.5	11.6	22.0	25.2
Switzerland			3.2	5.5	5.0	8.8	7.2
United Kingdom		17.8	10.1	15.3	11.7	12.2	19.1
United States	13.8	13.6	11.2	12.1	9.3	11.3	18.4

Source: ILO (2012).

Figure 8



Source : National Labor Force Surveys.

This figure , with the post crisis results , shows some situations that really need to be tackled urgently.

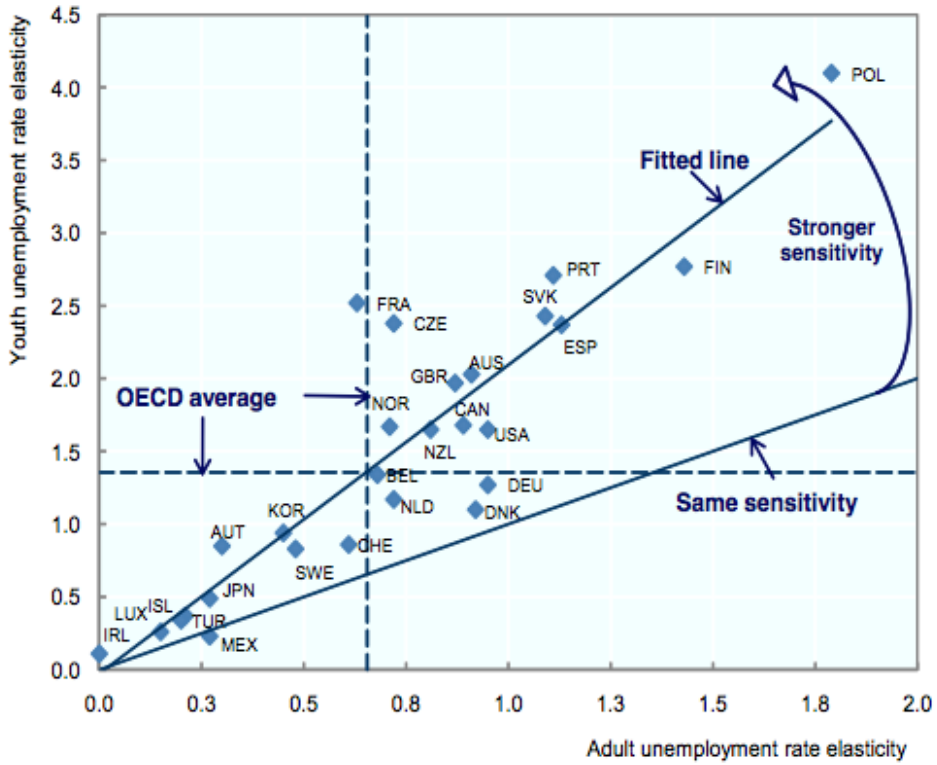
SECTION 2 : LITERARY REVIEW OF THE DETERMINANTS OF YUR

Many studies and empirical efforts have been devoted at explaining the determinants of youth and aggregate unemployment and its variability across countries and regions. In fact, the unemployment rates of the young are the most affected by labor market institutions and the other determinants of unemployment in general including the business cycle , to which they are much more sensible than adults unemployment as we can see from **Figure 9**.

Figure 9

Youth unemployment is more responsive to the cycle than adult unemployment[a]

% point change in the response to a 1 % point deviation from the growth rate of potential GDP, 1996-2007



Source : National Labor Force Surveys.

For the purpose of selecting the most appropriate determinants of YUR to be included in the theoretical framework , we shall divide the analysis in the following areas:

- Structural and demographics conditions
- Educational level
- Policies and Institutions
- Interaction with economic cycle and crisis effects

2.1 Structural and demographic conditions

First off we need to consider among youth unemployment determinants some basic structural and demographic conditions of each country under examination.

Among the structural conditions is entailed the degree of competitiveness of the country, which is also dependent on the national indices of economic freedom. The latter indices are provided by The Wall Street Journal and The **Heritage4** Foundation public databases, as a tool to monitor advancements delivered by the increase in economic freedom. The Index includes ten freedoms ranging from property rights to entrepreneurial ones – in 186 countries.

The index of economic freedom s an explanatory variable its coefficient is negative in relation to YUR and statistically significant when you set country and time fixed effects to the model (Choudhry, Marelli, Signorelli, 2012).

Figure 10

INDEX OF ECONOMIC FREEDOM 2014				
Country Name	World Rank	Region Rank	Overall 2014 Score	Change in Yearly Score from 2013
Australia	3	3	82,0	-0,6
Austria	24	14	72,4	0,6
Belgium	35	17	69,9	0,7
Canada	6	1	80,2	0,8
Denmark	10	3	76,1	0,0
Finland	19	9	73,4	-0,6
France	70	33	63,5	-0,6
Germany	18	8	73,4	0,6
Greece	119	40	55,7	0,3
Ireland	9	2	76,2	0,5
Italy	86	35	60,9	0,3
Luxembourg	16	7	74,2	0,0
Netherlands	15	6	74,2	0,7
Portugal	69	32	63,5	0,4
Spain	49	22	67,2	-0,8
Sweden	20	10	73,1	0,2
Switzerland	4	1	81,6	0,6
United Kingdom	14	5	74,9	0,1
United States	12	2	75,5	-0,5

Source : Heritage Foundation

The statistical significance of stringent anti-competitive product market regulations (PMR) in explaining high unemployment rates and poor labor market performance has been stressed **(OECD 2006)3**. There is clear evidence that higher economic freedom decreases YUR both by improving the functioning of such markets (direct effect) and by stimulating economic growth (indirect effect). The "index of the economic freedom of the world" EFW **(Feldmann 2010)10** , liberalization of international trade and more flexible regulations, were found to be significant. According to the information shown above , it is necessary to carefully examine the impact of Product Market Regulation on YUR , where OECD data will be available and sufficient for the analysis.

Demographic conditions instead, encompass the percentage of the young 15-24 on total population; demographics also include the role of migration flows on the relative size of the youth population (Korenman Sanders and Neumark 2000), who interpret cross-country differences in YUR by appealing to demographic shifts which cause fluctuations in the relative size of the youth population.

However, employment has fallen in the last decade both in countries where the youth cohort decreased and in countries where it remained stable. Therefore this factor will not be considered as part of the theoretical model.

2.2 Educational level

Thanks to technology , productivity has made enormous progress in the last thirty years. On the other hand the effect of productivity growth on employment is uncertain.

In overly-rigid markets if educational institutions do not provide unskilled youth with stepping-up skills (such as up to date technological knowledge) needed to

adapt to higher levels, productivity such as better use of technology may end up increasing youth unemployment rates (Jimeno 2002).

High YUR and underemployment are long-standing structural obstacles preventing many youth in both OECD countries and emerging economies from making a successful transition from school to work. Lack of appropriate educational levels in some countries is a further obstacle. The situation is summarized in the following **Figure 11**.

Figure 11: educational attainment of 25-64 year-olds, by program orientation and gender (2011)

		Upper secondary or post-secondary non-tertiary (ISCED 3/4)									Tertiary (ISCED 5)[1]								
		Vocational			General			Total[2]			Vocational			General			Total[3]		
		M+W	Men	Women	M+W	Men	Women	M+W	Men	Women	M+W	Men	Women	M+W	Men	Women	M+W	Men	Women
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
OECD	Australia	19	25	13	16	16	17	36	41	31	10	9	12	27	25	29	38	34	41
	Austria	57	61	54	6	5	6	63	66	60	x(16)	x(17)	x(18)	x(16)	x(17)	x(18)	19	22	17
	Belgium	26	29	24	11	10	12	37	38	35	x(16)	x(17)	x(18)	x(16)	x(17)	x(18)	34	32	36
	Canada	12	15	8	26	26	25	37	41	34	22	18	25	30	28	31	51	46	56
	Chile	x(7)	x(8)	x(9)	x(7)	x(8)	x(9)	44	43	44	x(16)	x(17)	x(18)	x(16)	x(17)	x(18)	29	29	28
	Czech Republic[4]	74	76	71	n	n	n	74	77	72	a	a	a	x(16)	x(17)	x(18)	18	18	18
	Denmark	42	46	38	2	2	2	43	48	39	x(16)	x(17)	x(18)	x(16)	x(17)	x(18)	33	29	37
	Estonia	32	36	28	20	22	18	52	58	47	12	8	16	24	20	28	36	27	44
	Finland	38	40	36	7	8	6	44	48	41	x(16)	x(17)	x(18)	x(16)	x(17)	x(18)	38	32	44
	France	30	35	26	11	9	13	42	45	39	11	10	13	x(16)	x(17)	x(18)	29	27	31
	Germany[5]	56	55	56	3	3	3	59	58	59	x(16)	x(17)	x(18)	x(16)	x(17)	x(18)	26	29	24
	Greece	15	17	12	26	24	29	41	41	41	8	8	7	16	15	17	26	26	26
	Hungary	22	21	23	38	44	33	61	66	56	1	1	1	x(16)	x(17)	x(18)	21	18	23
	Iceland	29	37	20	10	9	11	37	45	29	x(16)	x(17)	x(18)	x(16)	x(17)	x(18)	33	27	39
	Ireland	13	13	12	24	24	25	36	36	35	x(16)	x(17)	x(18)	x(16)	x(17)	x(18)	37	34	41
	Israel	11	13	9	26	26	26	37	39	35	x(16)	x(17)	x(18)	x(16)	x(17)	x(18)	45	42	49
	Italy	32	36	28	10	6	13	41	41	41	x(16)	x(17)	x(18)	x(16)	x(17)	x(18)	15	13	16
	Japan	x(7)	x(8)	x(9)	x(7)	x(8)	x(9)	54	53	54	x(16)	x(17)	x(18)	x(16)	x(17)	x(18)	46	47	46
	Korea	x(7)	x(8)	x(9)	x(7)	x(8)	x(9)	41	41	41	13	12	13	28	32	23	40	45	36
	Luxembourg	41	41	42	4	3	5	40	40	41	x(16)	x(17)	x(18)	x(16)	x(17)	x(18)	35	37	33
	Mexico	x(7)	x(8)	x(9)	x(7)	x(8)	x(9)	19	19	19	x(16)	x(17)	x(18)	x(16)	x(17)	x(18)	17	19	15
	Netherlands	32	33	32	8	8	8	40	40	40	x(16)	x(17)	x(18)	x(16)	x(17)	x(18)	32	33	30
	New Zealand	25	31	19	16	15	18	35	40	29	16	13	18	24	22	26	39	34	44
	Norway	32	37	27	12	11	12	44	48	40	2	3	1	35	30	41	37	33	42
	Poland[4]	58	64	51	8	6	10	65	69	61	a	a	a	x(16)	x(17)	x(18)	24	20	28
	Portugal[4]	x(7)	x(8)	x(9)	x(7)	x(8)	x(9)	18	18	18	a	a	a	x(16)	x(17)	x(18)	15	13	18
	Slovak Republic	68	74	63	4	3	6	73	76	69	1	1	2	x(16)	x(17)	x(18)	18	17	20
	Slovenia	55	62	47	5	4	6	59	66	52	x(16)	x(17)	x(18)	x(16)	x(17)	x(18)	23	18	28
	Spain	8	8	9	14	14	14	22	22	23	x(16)	x(17)	x(18)	x(16)	x(17)	x(18)	31	30	32
	Sweden	31	36	25	11	11	10	52	56	48	x(16)	x(17)	x(18)	x(16)	x(17)	x(18)	34	28	40
	Switzerland	38	37	40	6	5	8	50	47	54	11	14	7	22	24	20	33	38	27
	Turkey[4]	8	10	6	10	11	9	18	21	15	a	a	a	x(16)	x(17)	x(18)	14	16	12
	United Kingdom	x(7)	x(8)	x(9)	x(7)	x(8)	x(9)	37	40	35	10	9	10	29	28	29	38	38	39
	United States	x(7)	x(8)	x(9)	x(7)	x(8)	x(9)	47	48	46	x(16)	x(17)	x(18)	x(16)	x(17)	x(18)	41	39	43
	OECD average	34	37	30	12	12	13	44	46	42	m	m	m	m	m	m	31	29	33

Source : OECD

These data obviously also depend on the role played by families at providing income support (**Bentolila and Ichino 2000)9**. This does not compensate for the variation in European systems of State unemployment support , however , support provided by family members , tends to enhance the well-being of certain classes of the unemployed , such as women in couples and youngsters living at home.

Acknowledging the “youth experience gap” that harms employability of young people, appropriate institutions concerning the education system and the school-to-work transition processes become an outstanding priority **(Caroleo and Pastore 2007).6**

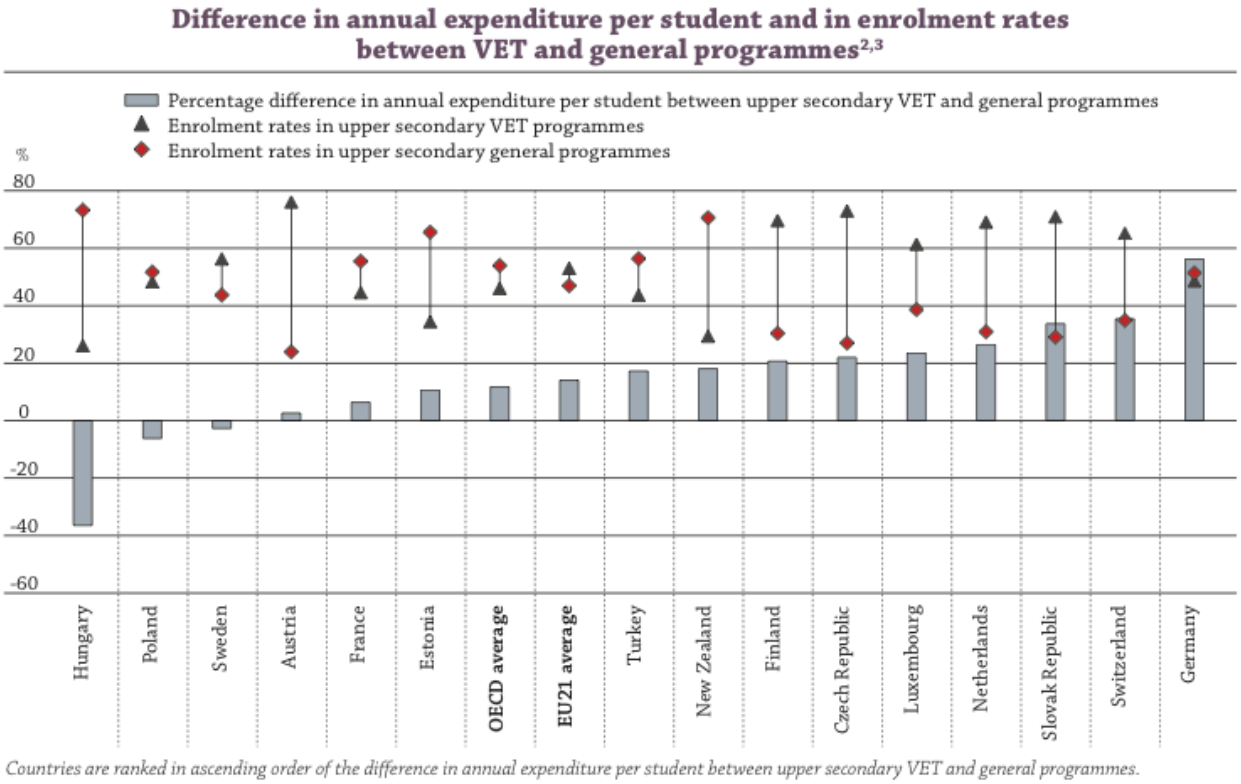
It seems, for example, that youth labor performance is better in countries operating a “dual apprenticeship system”, notoriously Germany, Austria and Switzerland, since it eases the transition to work. However, tradition and social consensus are strong so the system cannot be easily altered; but other forms of apprenticeship and work-based learning could also be appropriate in many countries, as long as they evolve with the evolving demand for labor as new jobs demand multi-skilled labor with general competences.

A better balance between post-secondary education and training is needed. In most countries the growth in enrolments in academic studies has outpaced that in technical and advanced vocational studies. There is a risk of a shortfall of further education and training , and of a surplus of academic knowledge. Vocational and academic studies should be complementary in their goal of students’ preparation.

A growing literature analyses the difficulties in the university to work transitions (Sciulli and Signorelli 2011) , changes in the school-to-work transition process in OECD countries (Quintini 2007) , trends in the youth labor market in developing and transition countries (O’Higgins 2005) , highlighting the considerable difficulties of integrating young people into "decent work" (Choudhry, Marelli, Signorelli 2012).

The mismatch between the knowledge acquired through formal education and the skills required by the labor market is referred to as “education signaling” and represents the degree to which the educational system’s output sends clear signals to employers about their suitability. Signaling is found to be high in Germany, while low in countries as Italy.

Figure 12



Source : OECD Education at a Glance 2013

2.3 Policies and Institutions

According to literature findings, much emphasis is to be given to the role of policies and institutions on YUR. Labor market is connected to institutions and policies which affect unemployment rates and shape labor market outcomes.

OECD 2006 report chapter 7 provides evidence that almost two-thirds of non-cyclical unemployment changes are explained by changes in policies and institutions. Referring specifically to Europe, OECD's Employment Outlook of 1997 talked of "eurosclerosis" – a consequence of labor market rigidities and inefficient policy mixes. **(OECD,1997.)12** Of course, numerous evolutions followed since then for the great majority of the continent. For the sake of clarity we will analyze each factor separately.

2.3.1 Labor Market Policies (LMP)

LMP interventions can be classified as services, measures or support. The first two are active (ALMP), the third is passive , i.e. unemployment support. The following **Figure 13** draws a picture of the various efforts of European countries on LMP in 2011 , when the global financial crisis was becoming an economic recession in many European countries.

Figure 13

Dataset: Public expenditure and participant stocks on LMP

Frequency		Annual		
Measure		Public expenditure as a percentage of GDP		
Programmes		Total	Total	
			Active measures (10-70)	Passive measures (80-90)
Country	Time			
Australia	2011	0,8	0,29	0,51
Austria		2,04	0,75	1,29
Belgium		2,96	0,86	2,09
Canada		0,91	0,26	0,65
Denmark		3,86	2,21	1,65
Finland		2,5	1,02	1,47
France		2,33	0,93	1,4
Germany		1,82	0,8	1,02
Greece		..	..	..
Ireland		3,55	0,91	2,64
Italy		1,78	0,42	1,36
Luxembourg		1,27	0,62	0,65
Netherlands		2,78	1,13	1,64
Portugal		1,91	0,59	1,32
Spain		3,77	0,89	2,88
Sweden		1,85	1,22	0,63
United Kingdom		..	..	..
United States		0,69	0,14	0,55

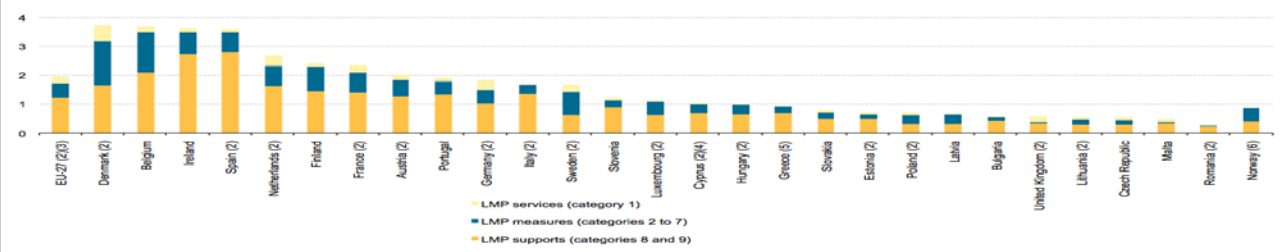
data extracted on 05 Sep 2014 07:32 UTC (GMT) from OECD.Stat

Source : OECD

Some important considerations can be immediately drawn from **Figure 13** and contribute to explaining the different results in employment/unemployment in the following years, which we have pointed out at the end of section 1 of this thesis. One aspect are the total values. As we can see, the highest values pertain to Denmark and Spain, however these two countries have achieved totally different

results in employment/unemployment after 2011, just as Germany and Italy which show very comparable total values. However, what is very different from Demark and Germany on one side and Spain and Italy on the other side, is the subdivision of LMP between active and passive. ALMP in Denmark account for almost 58% of LMP , over 43% in Germany , 23-24% only in Spain and Italy. Looking only at European countries , according to Eurostat as we can see from **Figure 14** below, the vast majority of expenditure on LMP interventions across the EU-27 (excluding Greece) in 2011 was directed to LMP supports (63,4%) , a further quarter (25.7 %) being directed to LMP measures and the remainder (10.9 %) to LMP services. There are substantial differences in strategy within European countries : Spain and Italy spent by far the most of their LMP investment on supports , Denmark , Belgium , the Netherlands , Sweden and Germany balanced more on measures and services.

Figure 14: Subdivision of LMP expenditures in services, measures, support



Source : Eurostat 2011

The different effects of active and passive policies is confirmed in literature. Boeri and Van Ours (2008) present ALMP as compensators to the disincentives brought about by too generous welfare states (high unemployment benefits). Bassanini and Duval (2006), analyzing a panel of 20 OECD countries between 1985 and 2002 found out a negative correlation between unemployment benefits (passive policies) and active policies. Generous unemployment benefits decrease work incentives, by

making job-seekers less willing to accept low-wage jobs , thereby diminishing the beneficial effects of active labor market policies. As to its interaction with crisis, we have seen that the greater the generosity of unemployment benefits, the slower the labor-market adjustment following shocks. It would therefore appear that Active LMP have a very different effect on YUR than Passive LMP and hence we shall analyze them separately.

2.3.1.1 Active Labor Market Policies

ALMP services cover all services and activities of the Public Employment Services (PES) together with any other publicly funded services for jobseekers. ALMP services include the provision of information and guidance about jobs, training and other opportunities that are available, job search assistance (preparing CVs or interview techniques), job placement. ALMP measures cover interventions that aim to provide people with new skills or experience of work in order to improve their employability or that encourage employers to create new jobs and take on unemployed people and other target groups. They deliver activation programs that force unemployed to take part in some activities in addition to the standard job search, with the goal of improving their probability of finding a regular employment afterwards. Vocational training, employment-start-up incentives and hiring subsidies are also comprised in measures.

ALMP are determinant in justifying the changes in both employment and unemployment rate. They consider 30 OECD countries over the period 1994-2004. According to their results, labor-boosting effects of ALMP constitute great part of the overall explanatory power of labor market institutions. ALMP facilitate transitions from unemployment to employment in several ways, being of particular

aid to edge-workers as youth so to escape the “poverty trap” by enhancing their labor market chances (Destefanis and Mastromatteo 2010).
Obviously , their use is to be evaluated in connections with other factors and with budget constraints.

2.3.1.2 Passive Labor Market Policies - Unemployment benefits (UBEN)

As mentioned earlier the third kind of LMP is support (passive politics). The latter stands for financial assistance to partially compensate individuals for a loss of wages and to support them during their job-search(early retirement and out-of-work income maintenance, meaning unemployment benefits). Relatively high unemployment benefit entitlements is found by OECD and others to increase youth unemployment, despite not having a significant effect on aggregate unemployment. A key factor is the so called “replacement rate” , i.e. unemployment benefit rates relative to average earnings. These rates are generally higher in Europe than in other OECD countries. The replacement rate rose during the 1970s and 1980s, with substantial rises in Denmark, Norway, Finland, Portugal, Spain, Ireland, Sweden, and Switzerland even though some countries have slowed down or even reversed the increase (United Kingdom and, to a lesser extent, Germany).
The best results occur when these measures increase the incentive to take a low-paid job by creating a bigger gap between in-work incomes (after taking account of taxes and benefits) and unemployment benefits. This implies that , instead of being discontinued , benefits continue "in-work" through measures such as Family Credit in the United Kingdom, Family Income Supplement in Ireland, or the Earned Income Tax Credit in the United States **(OECD 2005)2.**

2.3.2 Employment Protection Legislation (EPL)

Stringent EPL is found to have negative effects on youth entry into the labor market (Bassanini and Duval 2006).The main reason for negative consequences on youth unemployment is that stringent employment protection promotes the more or less deregulated use of temporary (fix-term) contracts.

On one side, these a-typical contracts may be seen as a stepping-stone into permanent labor market, as shown by the dichotomy “stepping-stone versus dead-end” (Booth et al. 2002).15

The use of temporary contracts hiring rates should increase since dismissal costs in temporary contracts are lowered. On the other side, temporary jobs end automatically after a relatively short period, which shortens employment spells and increases job loss rates, with a negative impact on mostly youth employment (Givord , Vilner 2011).

Youth are more likely to hold temporary jobs than adults. The problems associated with temporary work are “higher risk of job loss and labor market exclusion,” and lower wages **(ILO 2005)21**. The bargaining power of young workers implied in temporary contracts is lower, while that of permanent-contract insiders is greater, giving them way to claim relatively higher wages **(Bentolila and Dolado 1994)14**.

If EPL was low - in the absence of dismissal costs on permanent contracts - permanent employees could be dismissed at lower costs and employers would not benefit from using temporary contracts. If dismissal of permanent employees is costly (due to job security provisions or other factors), temporary contracts become an alternative employment type that does not impose dismissal costs and provides flexibility to adjust the size of the workforce. The usage of temporary contracts has traditionally been restricted, but in many countries these regulations have been gradually lifted.

Nevertheless, two views have emerged, stressing either the virtuous *(‘integration’)* or adverse *(‘entrapment’)* consequences of deregulating temporary contracts

(**Giesecke and Groß 2002)19**. Following the 'integration scenario', deregulating temporary contracts may undo the negative effects of job security provisions on young people. By increasing turnover in entry level positions, temporary jobs create more vacancies for young people, speed up the transition into first employment, and therefore lower youth unemployment (OECD 1994). Empirical studies consistently find considerable wage penalties for temporary compared to permanent employees **(Booth et al. 2002; Mertens et al. 2007)15,16**, especially among young temporary employees **(Gebel 2011)17**. Young people in entry-level temporary jobs dread job loss and unemployment, and they may accept (or be unable to resist) being underpaid for their work in exchange for the opportunity of having their temporary jobs converted into permanent ones (Polavieja 2003). Deregulation thus provides not only numerical but also wage flexibility, and if not the former, it may be the latter (probably unintended) effect that is actually employment-enhancing. Some argue that more jobs begin and end at any given moment, and therefore more transitions between employment and unemployment occur.

Critics, however, argue that de-regulating temporary contracts simply induces employers to destroy permanent jobs and replace them with temporary ones (Blanchard and Landier 2002; Cahuc and Postel-Vinay 2002; Kahn 2010). This 'entrapment scenario' prevails in countries where dismissal of permanent employees is very costly, for example if permanent contracts are subject to strict job security provisions. If temporary contracts are deregulated while dismissal of permanent employees remains costly, so called partial deregulation (Blanchard and Landier 2002), employers substitute permanent with temporary jobs and now have a lowered incentive to convert temporary into permanent jobs. As temporary jobs are not renewed or converted into permanent ones, young people cycle through repeated spells of temporary employment and unemployment with lowered

chances of obtaining a permanent job. Turnover in entry-level jobs may even increase excessively, resulting in higher, not lower youth unemployment (Blanchard and Landier 2002; Cahuc and Postel-Vinay 2002).

Some prior researchers have aggregated both dimensions of EPL (Botero et al. 2004; OECD 2004). In fact, it is important to keep them separate and model them interactively **(Gebel 2011)18**.

The duality of this determinant is confirmed in the ENEPRI research-working papers, as shown by the conclusions drawn by Dolado, Felgueroso and Jimeno (2002) showing that the ranking measures for EPL and the strictness of regulations affecting temporary contracts in the regressions do not seem to be associated with higher relative youth unemployment: countries with stricter EPL liberalized "atypical" fix-term contracts to a larger extent and this resulted in higher hiring rates for young workers. In fact, the EPL estimated coefficient even though positive was not significant in all specifications. It would seem that changes in EPL job security provisions and use of temporary contracts alone would affect labor market flows, but would leave aggregate employment or unemployment rates unchanged (Blanchard and Landier 2002; Kahn 2010).

The real effects of EPL alone are less than those in combination with educational signaling (as already mentioned, this is the degree to which the educational system's output sends clear signals to employers about students suitability). Signaling is measured by the percentage of those enrolled in upper secondary education who are in vocational and technical programs that combine school and work-based training.

Figure 15

Youth/adult unemployment rates, employment protection and education/ work linkages in selected countries, average values 1995–1999

	Ratio of youth/adult unemployment rates	Employment protection	Educational signalling
Low employment protection and low signalling (D)			
Australia	2.30	1.0	0
Belgium	2.63	1.5	3
Canada	2.00	0.9	missing
New Zealand	2.40	1.7	8
Ireland	1.69	1.6	5
UK	2.15	0.8	0
USA	2.79	0.2	missing
Average	2.28	1.1	3.2
High employment protection and high signalling (A)			
Germany	1.14	2.8	52
Austria	1.46	2.6	34
Czech Republic	2.25	2.8	47
Poland	2.55	2.2	69
Netherlands	2.05	3.1	23
Hungary	2.05	2.1	26
Average	1.92	2.6	41.8
High employment protection and low signalling (C)			
Portugal	2.42	4.3	0
Italy	3.62	2.8	0
Spain	2.04	2.6	2
Greece	3.80	2.4	0
France	2.46	2.3	11
Sweden	2.55	2.8	0
Norway	3.21	2.4	0
Finland	2.23	2.1	5
Japan	2.35	2.7	0
Korea	3.31	3.2	0
Mexico	2.25	2.3	0
Turkey	2.91	2.6	missing
Average	2.76	2.7	1.6
Others			
Denmark	1.68	1.6	48
Switzerland	1.52	1.2	60
Average	1.60	1.4	54

Sources: Ratio of youth to adult unemployment: OECD Employment Outlook (various) Employment protection: OECD Employment Outlook, June 1999. Educational signalling (percentage in upper secondary education school and work-based training): OECD Education at a Glance, 1998.

Source : OECD

As we can see , Italy and Germany are both characterized by high EPL, but educational signaling is high in Germany and low in Italy. As a result in Germany

the inflow to jobs from both education and NEET , respectively 29% and 40%, (ECHP) is much higher than in Italy where it is 9% and 26%: indeed, employment protection makes employers reluctant to hire job seekers, while, in Germany, where EPL is equally stringent, this issue is overcome by the educational credentials that job seekers possess.
As for the relationship between EPL and ALMP , high EPL is likely to reduce the potential effectiveness of ALMP. This is due to the limiting hiring effect of EPL.

2.3.3 Trial period

The length of the trial period is an institution that might have an impact in the decision of firms to hire young people. The trial period gives the employer the chance to assess the skills of newly hired individuals without fearing lengthy dismissal procedures if the individuals do not suit the firm's needs. In the OECD, the average trial period was four months in 2008, ranging from no trial period in New Zealand to 10-12 months in Denmark, Ireland and the United Kingdom.
Both short and long trial period have disadvantages. In particular, very short trial periods are likely to discourage the hiring of young people whose productivity is difficult to judge in such a short time. However , long trial periods can be used as a sort of temporary contract, allowing firms to rotate different workers in positions which do not require real experience.

2.3.4 Minimum wages , wage bargaining and tax wedge

There is little consensus in the literature regarding the unemployment effects of EPL, trade union bargaining power and the structure of collective bargaining.

Baseline equations found union density correlation to unemployment not statistically significant (OECD 2006). In addition, the high standard errors delivered - reflecting the uncertainty of the evaluations' outcomes- is coherent to the country-specific different results that come out from the regressions controlling for different countries in this paper's model: it is clear that in each country the effect of minimum wages and unions' density is largely differential. On the other side, there are findings (Kahn 2000) remarking that higher incidence of unions and of collective bargaining increase the relative youth unemployment rate and the youth unemployment differential, in a panel of 15 OECD countries over the period 1985-94. The theoretical framework behind these findings is that unions' pressure on wage determination increases unemployment rates for youth, which are the first to be squeezed out of employment as minimum wages rise.

A similar relative wage effect also appears through the tax wedge variable. Increases in the tax wedge have the strongest impact on the employment opportunities of workers at the bottom of the wage distribution, where restrictions from minimum wage legislation are frequently binding. Hence, as the tax wedge rises, youth unemployment rates ought to be expected to rise by more than prime age male unemployment (Jimeno 2002).

2.4 Interaction with economic cycle and crisis effect

In seeking determinants of labor market slack the first researchers (Scarpetta, 1996, Nickell and Layard, 1999, Belot and van Ours, 2000) used cross-sectional or pooled cross-sectional data on indicators of labor market performance and labor market institutions to account for unemployment differentials across countries. More recent studies instead, try to explain countries' unemployment differentials

through the interactions of macroeconomic shocks and labor market institutions (Blanchard and Wolfers, 2000, and Bertola, Blau, and Kahn, 2002).

In order to analyze the effects on YUR of the financial and economic crisis which started in 2008, we should consider how macroeconomic factors generally affect YUR. From macroeconomic theory we know that higher interest rates lead to higher inflation, which according to the Phillips curve leads to higher employment and lower unemployment. However , changes in exchange rates due to higher interest rates (for instance , for Europe , increase of Euro against US Dollar) could lead to a raise in the rates of imports in certain industries leading to a fall in demand for the goods in that industry (Peterson and Vroman, 1992) and to a decrease of exports, with negative consequences on GDP, and GDP growth - according to Okun's law - has a negative correlation with aggregate unemployment and thus YUR. More recently, the IMF in 2010 used a dynamic estimation model to examine the role of institutions and policies in explaining changes in Okun coefficients across countries and time. These types of shifts result in mismatches which are considered to be among the structural causes of unemployment (Peterson and Vroman, 1992).

The crisis 2008-2011 has hit youth very hard. In the OECD area, the youth (15-24) unemployment rate rose by 6 percentage points in the two years to the end of 2009, to reach almost 19%. There are currently nearly 15 million youth unemployed in the OECD area, about four million more than at the end of 2007. And in countries like France and Italy, about one active youth in four is unemployed, while in Spain more than 40% of them are jobless. In April 2013, the youth unemployment rate was close to 60% in Greece and Spain. For the OECD as a whole it rose to 16.5%, up from 12.1% just prior to the crisis, and two-and-a-half times the unemployment rate for those aged 25 and over.

Figure 16

Source : OECD " Giving youth a better start"

However, as we can infer from this figure which compares YUR rates three years after the start of the crisis in different countries , the harshness is unequal in the countries under exam. Living aside countries not included in our sample (some of these such as Brazil or Indonesia were even spared by the crisis), we notice a significant difference between Germany and the other lager European countries such as Spain, Italy, France, UK and also with the US. One explanation could be that Germany was spared by the crisis, but we know that also German banks were hit by the financial crisis in 2008, so Germany was not totally spared in fact. Therefore the explanation lies also elsewhere, in the mitigating effects of various factors. Employment protection legislation does not seem to play a key role in this respect. In fact, as we can infer from **Figure 17**, Germany has an EPL index intermediate between that of Italy France Spain and that of the Anglo-Saxon countries.

Figure 17 : EPL on temporary contracts

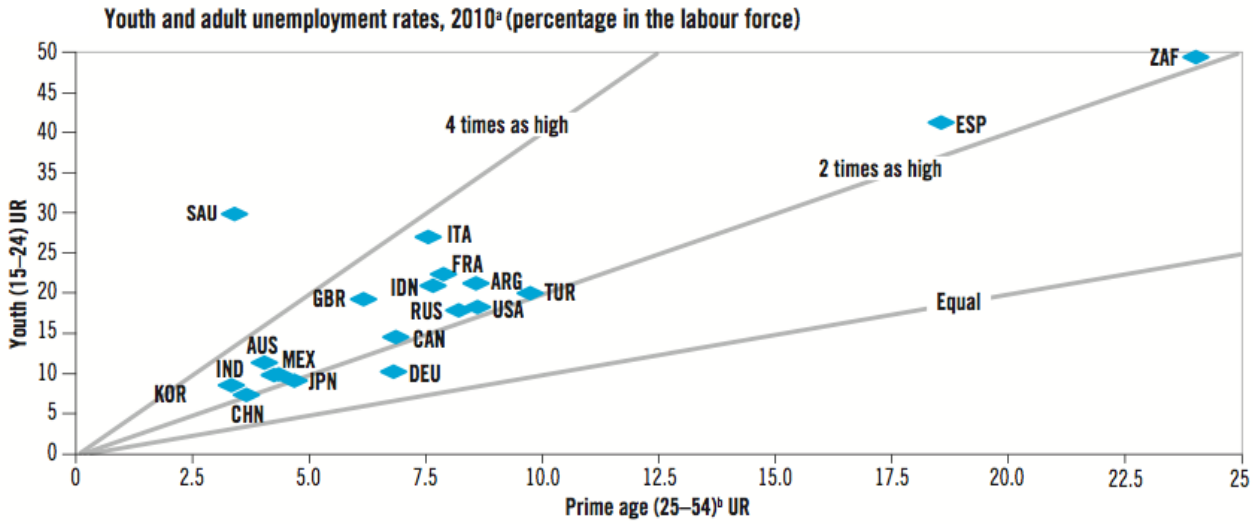
Dataset: Strictness of employment protection – temporary contracts

		Series	Version 3 (2008-2013)
Country	**Time**		
Australia	2010		1,041666627
Belgium			2,416666508
Canada			0,209999993
Denmark			1,791666746
France			3,75
Germany			1,541666627
Greece			3,166666508
Hungary			1,916666627
Italy			2,708333492
Luxembourg			3,833333492
Netherlands			1,166666746
Norway			3,041666508
Poland			2,333333492
Portugal			2,458333492
Slovenia			2,5
Spain			3,5
Sweden			0,791666627
United Kingdom			0,416666657
United States			0,333333343

data extracted on 23 Jul 2014 17:12 UTC (GMT) from OECD.Stat

We know that EPL normally applies more to permanent adults jobs than to informal temporary jobs where youth is over represented. But there is a significant difference in the structure of unemployment in Germany in comparison to others.

Figure 18 -: YUR and AUR (prime age from 25 to 54) in 2010.



[a] Data refer to 2009 for China, India, and Saudi Arabia.
[b] Data refer to the total (instead of prime-age) unemployment rate for Argentina, China, India, Russia, and South Africa.
Source: OECD calculations based on *OECD Main Economic Indicators Database;* and ILO, LaborSta.

We can infer from the above that Germany in this respect is very different from the other countries mentioned above. While Italy, France, UK, Spain, USA have a YUR to AUR ratio between 2 and 4, Germany delivers a YUR not much higher than AUR. This structure of the labor market appears more resilient to the effects of economic crisis from the YUR point of view both compared with countries with higher or lower EPL.

In fact, a reconstruction of the most immediate effects of the financial crisis comparing 2008 with 2009 **Figure 19** shows that only in Germany and USA (the lowest EPL) the differential increase in YUR versus AUR is very limited but it is better in Germany than in the US even though Germany has a much higher EPL than the US , EPL which normally protects the adults more than the young.

German values are therefore better not only in absolute terms representing the strength of the whole system , but also in balancing the crisis effects among different age ranges.

Figure 19: YUR-AUR comparison pre crisis

country/year		2008	2009	%
France	AUR	6.1	7.5	1.4
	YUR	18.6	23.2	4.6
Germany	AUR	7.2	7.4	0.2
	YUR	10.4	11	0.6
Italy	AUR	5.6	6.5	0.9
	YUR	21.3	25.4	4.1
Spain	AUR	9.8	15.8	6.0
	YUR	24.5	27.7	13.2
United Kingdom	AUR	3.7	5.8	2.1
	YUR	14.1	19	4.9
United States	AUR	4.6	8.4	3.4
	YUR	12.8	17.6	4.8

AUR = adult unemployment trate
YUR = youth unemployment trate

Source : OECD

Looking at the data on a longer time frame for both age groups , from immediately before the crisis to 2013 we can see from **Figure 22** and **Figure 23** below some significant differences.

Figure 20: Age 25-64 Employment and unemployment 2008-2013

Dataset: LFS by sex and age - indicators	age 25 to 64						
Country	**Series**						
	Time	2008	2009	2010	2011	2012	2013
Australia	Employment/population ratio	75,5	74,9	75,4	75,8	75,6	75,4
	Unemployment rate	3,2	4,3	3,9	3,8	3,9	4,4
Canada	Employment/population ratio	77,0	75,3	75,5	75,9	76,4	76,5
	Unemployment rate	5,1	7,0	6,8	6,3	6,1	6,0
France	Employment/population ratio	72,6	71,7	71,6	71,6	71,9	72,1
	Unemployment rate	6,1	7,5	7,8	7,8	8,4	8,4
Germany	Employment/population ratio	75,0	75,4	76,1	77,5	78,1	78,5
	Unemployment rate	7,2	7,4	6,8	5,7	5,2	5,1
Italy	Employment/population ratio	65,0	64,0	63,5	63,7	63,6	62,7
	Unemployment rate	5,6	6,5	7,1	7,0	9,0	10,4
Spain	Employment/population ratio	70,0	65,9	65,0	64,4	62,2	61,3
	Unemployment rate	9,8	15,8	17,9	19,3	22,6	23,9
United Kingdom	Employment/population ratio	76,4	74,8	74,7	74,9	75,5	76,3
	Unemployment rate	3,7	5,8	5,9	5,9	5,8	5,6
United States	Employment/population ratio	75,5	72,5	71,8	71,7	72,2	72,3
	Unemployment rate	4,6	8,0	8,3	7,7	6,8	6,1

data extracted on 24 Jul 2014 10:55 UTC (GMT) from OECD.Stat

Source : OECD

Figure 21 Age 15-24 Employment and unemployment 2008-2013

Dataset: LFS by sex and age - indicators	age 15 to 24						
Country	**Series**						
	Time	2008	2009	2010	2011	2012	2013
Australia	Employment/population ratio	64,5	61,2	60,5	60,4	59,6	58,7
	Unemployment rate	8,8	11,5	11,6	11,4	11,7	12,2
Canada	Employment/population ratio	59,7	55,5	55,0	55,4	54,5	55,1
	Unemployment rate	11,6	15,2	14,8	14,2	14,3	13,7
France	Employment/population ratio	31,3	30,3	30,0	29,5	28,4	28,6
	Unemployment rate	18,6	23,2	22,9	22,1	23,9	23,9
Germany	Employment/population ratio	47,2	46,6	46,8	48,2	46,6	46,8
	Unemployment rate	10,4	11,0	9,7	8,5	8,1	7,9
Italy	Employment/population ratio	24,4	23,9	22,6	21,4	20,5	18,0
	Unemployment rate	21,3	25,4	27,9	29,1	35,3	40,0
Spain	Employment/population ratio	39,6	30,8	27,4	24,2	20,3	18,6
	Unemployment rate	24,5	37,7	41,5	46,2	52,9	55,5
United Kingdom	Employment/population ratio	56,3	51,9	50,7	50,1	50,0	48,8
	Unemployment rate	14,1	19,0	19,3	20,0	21,0	20,9
United States	Employment/population ratio	51,2	46,9	45,0	45,5	46,0	46,5
	Unemployment rate	12,8	17,6	18,4	17,3	16,2	15,5

data extracted on 24 Jul 2014 10:51 UTC (GMT) from OECD.Stat

Source : OECD

As we can infer from the figures above , in some countries (such as the United States, UK, Australia , Canada and also in Spain), immediately following the financial crisis employment was cut rapidly and deeply both in adults and young cohorts at the cost of high increases in unemployment from 2008 to 2009 , while in some other countries (Germany, France and Italy), existing and specific policy measures on EPL caused a much smaller immediate reaction on jobs , practically none in Germany and only some increase in unemployment rate (mostly in YUR) in France and Italy (the policy no firing & no hiring). However , in many countries , persistence of the recession prolonged the duration of the impact in the period 2010-2013. In the US , Canada , UK and Australia , the overall jobs situation either improved or remained stable. In Germany the jobs situation improved both in adults and young people , in France it remained pretty stable , including the high difference between adults and young , in Italy it deteriorated on the adults and dramatically degenerated for the young, with YUR rising from 29 to 40 percent , a percentage increase which is even worse than Spain , Greece and Portugal , who had reacted much earlier and where the absolute figures are worse but the loss of jobs has slowed down and some productivity has been recovered. The comparison for Italy is of little help if done with countries such as the USA , Canada , UK, Australia , with extremely different cultural/religious background and very different ideas on social protection. These countries decided immediately to preserve productivity by job cutting and increase their exports through weaker exchange rates. Therefore the most interesting comparison for Italy is within Europe , in a world culturally more similar , with the same (very high) exchange rate. Here , productivity during and after the crisis has followed different paths. Immediate , somehow externally forced , fierce job cutting took place in Spain , Greece , Portugal. Other countries , notably Germany thanks to working hour

adjustments, agreed with trade unions, targeted policies for young people, opted for a suspension of salary increases but preserved employment. Those countries such as Italy that tried to preserve both employment and salaries , damaged productivity. In a regime of fixed exchange rate within Europe , this has caused a strong decline in exports which now reflects in high employment deterioration in the last three years.

We also need to look at the recent results of smaller European countries , some of them , such as the Nordic countries show stable or declining YUR data , and some of their policies may be helpful to the larger European countries. The comparable YUR data are shown in **Figure 22**.

Figure 22 YUR 15-24 post crisis

Youth unemployment by sex, age and educational attainment level
Short Description: Short Description is not available
Last update: 08.07.14
Source of data: Eurostat

SEX: Total **AGE:** From 15 to 24 years **UNIT:** Percentage **ISCED11:** All ISCED 2011 levels

TIME / GEO	2011	2012	2013
Belgium	18,7(b)	19,8	23,7
Denmark	14,2	14,1	13,1
Germany (until 1990 former territory of the FRG)	8,6(b)	8,1	7,9
Ireland	29,1	30,4	26,8
Greece	44,4	55,3	58,3
Spain	46,2	52,9	55,5
France	22,1	23,9	23,9(b)
Italy	29,1	35,3	40,0
Luxembourg	16,8	18,8	15,5
Netherlands	7,6	9,5	11,0(b)
Austria	8,3	8,7	9,2(b)
Portugal	30,1(b)	37,7	37,7
Sweden	22,8	23,6	23,5
United Kingdom	21,1(b)	21,0	20,5
Norway	8,7	8,5	9,1
Switzerland	7,7	8,4	8,5
Former Yugoslav Republic of Macedonia, the	55,3	53,9	51,9

Available flags:
b break in time series
c confidential
d definition differs, see metadata
e estimated
f forecast
i see metadata
n not significant
p provisional
r revised
s Eurostat estimate
u low reliability
z not applicable

Special value:
: not available

Source : Eurostat

This analysis of the crisis which started in 2008 , looking at it in Europe six years after its start, could suggest that institutions and policies similar to those adopted in Continental Europe, could minimize the impact on labor markets. On this issue there is a lot of political debate going on in the Southern regions of Europe. Here , NEET and YUR show a very low responsiveness to GDP slight improvements. This means that, due to structural problems, in absence of dramatic reforms through a combination of active and passive labor policies , even when the economy will eventually recover, many years will elapse before the situation might improve (Bruno, Marelli, Signorelli,2013)

SECTION 3 : MICROECONOMIC ANALYSIS

3.1 Model description

This section will provide an econometric analysis of the determinants described in the literary review by means of the STATA software, focusing on UR_1524, meaning youth comprised between the ages of 15 and 24 and on UR_2529 when necessary.

We will use an ordinary least squares regression model (OLS) in which the dependent variable will be ur-1524. Only for the most important factors , after a first level of analysis , we will look at interactions and also use as dependent variable ur-2529 or er-1524. The dataset is derived from OECD and includes all the 18 countries under examination (EU 15 plus Australia , Canada and USA) and the years covered, when data are available, are those from 1983 to 2013.

The coefficients represent the so-called semi-elasticity, i.e. the percentage change in the dependent variable that follows from a unit-change in the independent

variable. Thus a coefficient of an independent variable of - X means an increase of one unit in the independent variable causes a decrease of X units in the dependent or better yet- a percentage decrease of the coefficient value times 100. The linear model also defined as level-level model to distinguish it by log-level or level-log models predicts that DeltaY=Beta1*DeltaX.

3.2 Basic analysis

In the first instance we have examined each independent variable considered in the literary review in connection with the dependent variable UR_1524 as examined in the literary review.

Table 3.1

regr/model	ALMP	UBEN	EPL	TAX W	UNDENS	MINW	IMM FL	SIGN	PMR
ALMP	-2,996								
	[0,943]***								
UBEN		4,672							
		[0,349]***							
EPL			0,36						
			[0,58]						
TAXWEDGE				0,154					
				[0,33]					
UNDENS					0,017				
					[0,056]				
MINWAGES						0,002			
						[0,001]***			
IMMFLOWS							-0,017		
							[0,006]***		
SIGNLN								0,0001	
								[0,0001]**	
PMR									4,22
									[1,589]**

Table 3.1 yields results that are mainly consistent with the literary review under section 2. Unemployment benefits and PMR are found to have a relevant increase impact on YUR 15-24, while ALMP has the effect of reducing YUR 15-

24. Results for ALMP and UBEN are statistically significant at 1% significance level, while product market regulation (PMR) at 5%. The result for EPL is not statistically significant. As a matter of fact , the OECD indicator of EPL comprises two main components, namely EPL on temporary contracts and EPL on permanent contracts. When only EPL on permanent contracts is included in the regression, its estimated coefficient remains not significant as in table 3.1. The other factors , as predicted in the literary review , are not clear-cut as to their specific impact on YUR 15-24.

3.2 Interactions among key variables

We have explored the interactions between the key factors ALMP UBEN PMR and EPL. The results of the regressions for interactions are shown in table 3.2 for YUR 25-29 and in table 3.3 for YUR 15-24.

Table 3.2

INTERACTIONS	UR2529 EPL-Tempc	ALMP	UBEN	DismRegC	PMR
EPL-Tempc	-		0,35	3,29	
ALMP		-	-0,95		
UBEN	0,35	-0,95	-	1,01	
DismRegC	3,29		1,01	-	5,02
PMR				5,02	

Table 3.3

INTERACTIONS	UR1524 EPL-Tempc	ALMP	UBEN	DismRegC	PMR
EPL-Tempc	-		-0,68	4,96	
ALMP		-			
UBEN	-0,68		-		
DismRegC	4,96			-	
PMR					

(*) DismREgC is the proxy measure for EPL on regular contracts. As dismissal number on total regular contracts increases , it means EPL decreases (firing costs are lower).

The resulting interaction factors are not statistically significant for YUR 15-24 where EPL on permanent contracts has little or no application , while they are statistically significant for YUR 25-29.

3.3 Controlling for other variables

We have now studied a model represented in table 3.4. This model has UR_1524 as dependent variable and five independent variables in the area of labor policies plus GDP.

Table 3.4

	UR15_24 Model 1	
epltempc	2,687	***
oowincsup	3,162	***
almp2070	-6,987	***
uniondens	0,008	
twedge		
gdpbyexp	-1,468	
dismregc		
cons	11,891	***
N	351	
rss	18503	
r2	0,286	
mss	7417	

legend : *p<0,1; **p<0,05; ***p<0,01

As we can see , increasing unemployment benefits increases YUR while active measure policies have opposite results and both coefficients are significant at the 1% level. The increase in number of dismissal on regular contracts has a negative coefficient , it therefore reduces unemployment in the 15 to 24 age range , and it is statistically significant at the 1% level.

The coefficient for GDP exp is negative , as one would expect , but not statistically significant.

3.3 Key labor policies country specific

Having identified the key factors affecting youth unemployment we now need to factor them into a cross-country / time-series analysis.

Country effects are now included and modeled through deterministic dummy variables. The inclusion of country effects is necessary to control for country-specific averages of omitted policies and institutions. Since the policy and institutional indicators included in the analysis tend to be much more correlated across countries than within a given country and over time, one can expect that the inclusion of country effects is sufficient to control for most of the relevant omitted variables.

Therefore controlling for country dummies the model works as follows:

Y= b0+ b*x, meaning Y= beta0(omitted category) + beta0(country) + beta1*x1; this means the lower (the more negative) the beta0 coefficient of the i-th country dummy, the lower the effect on youth unemployment of the explanatory variable taken in consideration. The more negative is the b0 coefficient, the greater is the differential impact with respect to the base country.

We have controlled for country-specific fixed effects which are time-invariant and we have omitted a country using it as the base category. The latter meaning that we compare each country's coefficient with the omitted country's coefficient. The constant beta0 in our model therefore represents the omitted country and it represents the intercept when the independent variable is equal to zero. The intercept is always needed in order to obtain a prediction of Y from the OLS regression line.

Four models have been studied and are represented in Table 3.5.

Table 3.5

	UR15_24 Model 2		UR25_29 Model 3		UR15_24 Model 4		UR25_29 Model 5	
epltempc	-1,104	***	-0,397	**	-1,053	***	-0,406	**
oowincsup	5,167	***	3,953	***	5,068	***	3,971	***
almp2070	-3,656	***	-1,406	**	-3,623	***	-1,412	**
gdpbyexp					-0,145	*	0,025	
australia	omitted		omitted		omitted		omitted	
austria	-25,411	***	-13,388	***	-25,096	***	-13,443	***
belgium	-10,486	***	-7,165	***	-10,287	***	-7,199	***
canada	omitted		omitted		omitted		omitted	
denmark	-25,243	***	-13,341	***	-24,957	***	-13,391	***
finland	-15,319	*	-9,875	***	-14,946	***	-9,941	***
france	-6,901	***	-4,778	***	-6,74	***	-4,806	***
germany	-23,575	***	-10,579	***	-23,315	***	-10,625	***
greece	0,425		0,076		0,499		0,064	
ireland	-18,946	***	-10,687	***	-18,129	***	-10,824	***
luxemburg	-10,007	***	-7,146	***	-10,242	***	-7,106	***
netherland	-26,899	***	-16,314	***	-26,446	***	-16,391	***
portugal	-13,651	***	-6,666	***	-13,421	***	-6,705	***
spain	-2,638	**	0,46		-2,255	*	0,393	
sweden	-12,928	***	-8,824	***	-12,675	***	-8,868	***
uk	-17,788	***	-7,846	***	-17,411	***	-7,912	***
us	omitted		omitted		omitted		omitted	
_cons italy	29,426	***	14,291	***	29,463	***	14,285	***
N	358		349		358		349	
rss	4969		1878		4926		1876	
r2	0,815		0,808		0,817		0,808	
mss	21984		7938		22027		7939	

legend: *p<0,1; **p<0,05; ***p<0,01

Model 2 considers UR_1524 as the dependent variable , Model 3 considers UR_2529 as the dependent variable , Models 4 and 5 add to respectively Model 2 and Model 3 the independent variable GDPexp.

Starting from Model 2 we observe the confirmation that unemployment benefits in the form of income support and active labor market policies have quite opposite effects on unemployment and that increasing employment protection legislation on temporary contracts reduces unemployment between ages 15 and 24 , an opposite result to what we have previously noticed on the protection on permanent contracts

through the index that measures the number of dismissals on total permanent contracts. These coefficients are all significant at the 1% significance level.

At a country level , we have used Italy as the omitted variable. The constant therefore represents Italy's intercept when all independent variables are zero. As we can see , apart from the three countries omitted (Australia , Canada and US) all other countries , with the possible exception of Greece whose constant is not significant , show a much lower intercept than Italy , and this is especially true in Austria , Denmark, Germany and Netherlands. All constants are significant at the 1% significance level with the exception of Spain which is significant at the 5% level.

Model 3 , which has the same independent variables but UR_2529 as dependent variables has coefficients which indicate the same general effects , but lower in value and significance. Unemployment income support still has the effect of increasing unemployment, but less than on the younger age range. And active labor market policies still have the effect of lowering unemployment, but this effect is lower than on the younger age range. And the effect of employment protection legislation on temporary contacts is still to lower unemployment , but the value is now lower and less significant. Looking at the specific countries we can observe lower absolute values of unemployment than for the age bracket 15-24 , and the only specific difference from Model 2 is the situation in Spain , which is similar to Greece , lower value e not significant.

Model 4 and Model 5 add to the previous two models the independent variable GDPexp which measures GDP output in current prices and constant prices. For the Euro area countries the data in national currency for all years are calculated using the fixed conversion rates against the Euro.

In Model 4 and in Model 5 all coefficients remain basically unchanged , while the coefficient of GDPexp is negative , therefore reducing unemployment , and significant at the 10% level for the age bracket 15-24 and slightly positive but not significant for the age bracket 25-29. These results suggest that the analysis for the impact of GDP and therefore of shocks should be conducted with a wider set of data , including the distance of each country's GDP to its potential value over time.

SECTION 4 : CONCLUSIONS

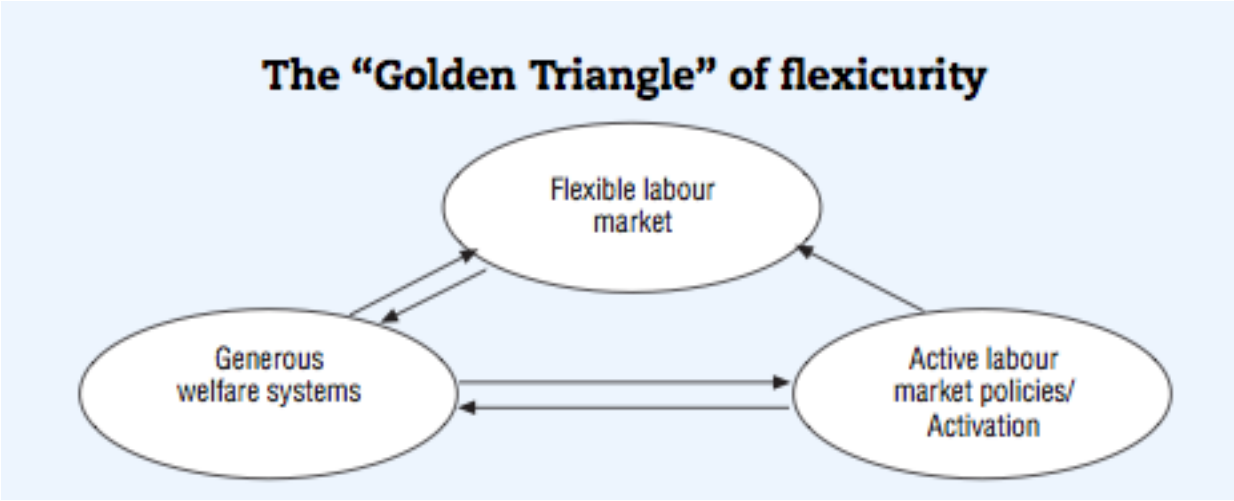
Changes in labor policies and structural institutional factors in the Models under section 3 seem to play a key role in non-cyclical unemployment changes over the past three decades. In particular, high and long-lasting unemployment benefits and employment protection legislation on permanent contracts, as well as anti-competitive product market regulation (PMR) appear to be major causes of unemployment both for age 15-24 and for age 25-29. Public spending on active labor market programmes (ALMPs), such as labor market training, are estimated to be associated with lower unemployment. The interactions among ALMP , EPL and unemployment benefits have been found to be statistically significant throughout our analysis. This implies that no single reform can make a difference "per se" , but it is often a combination of a package of resources that can have a real impact , especially in the "labor policies" area which can be tackled more quickly than institutional and structural issues around education and product market regulation.

One labor package of policies that is under a lot of attention today in many countries is the so-called "Flexicurity" approach which combines high public expenses on ALMP as aid for unemployed, a flexible and mobile labor market due to moderate EPL, and generous welfare systems providing social security. This

“Golden Triangle” is a perfect compromise between the flexibility often attributed to deregulated Anglo-Saxon countries and strict job protection characterizing (southern) European countries.

The European country where this approach is more developed is Denmark. Denmark is a good example of a country that has chosen to combine a high level of expenditure on ALMP, particularly on activation policies for the unemployed, with an EPL which is lower than European average but higher than US, UK, Canada and Australia. In fact , due to its relatively liberal regime of EPL , the average level of worker turnover in Denmark is as high as about 30% (Bingley et al.1999). Its job tenure levels are at the extreme low levels on international scale along with countries as UK and the US. This high level of job mobility and low level of employment protection could cause a widespread perception of insecurity among workers but this does not occur when it is not so difficult to find a new job thanks to the high level of active labor market policies and “in work” benefits.

Figure 23 : Flexicurity model



There is a lot of political debate going on these issues, especially in Europe. It is clear that this model has very heavy costs , the resources to finance such a program

are very difficult to find in a time of economic slowdown and with the budget constraints set by the European Union. It is beyond the scope of this thesis to take a position on this issue , but if persistent youth unemployment is considered a real problem not only for the young unemployed in the short term , but for a country in the long term , it is hard to accept the idea that budget constraints (i.e. the protection of the creditors , often employed) is the only driver to policy.

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