THE DETERMINANTS OF ACTIVITY RATES IN SOME SOUTHERN EUROPEAN COUNTRIES

Abstract

Activity rates in Southern Europe (Greece, Spain, Italy and Portugal) have systematically been quite low if compared to EU standards: Italy is the laggard with 42.4 percent in 1995, compared to 56.8 percent in EU-15. Nevertheless, in the last thirty five years the general trend in the region has been characterized by a considerable and continuous increase, especially in female participation in labor market activities. Cross-country comparisons highlight quite some heterogeneity degrees, and these are attributable to geographical and gender differences. These *circumstances*, by definition not under the control of individuals (Checchi & Peragine 2010), hamper the very decision making processes of participating in labor market, even before the action (*effort*) of looking for an employment position. It is argued that the hypothesis of "discouraged worker" may be enhanced by the existence of those circumstances rather than weakened or cancelled out by the individual's effort.

The main purpose of this paper is to shed some light on factors that have determined different patterns of participation in the labor markets across countries and genders as well as on the reasons behind the observed trends over the past decades. The original part of it will be the attempt to embody some role for cultural variables (using European Values Survey based indicators) in the empirical analysis. The study is based mainly on data drawn from Eurostat. Female activity rates are analyzed focusing on international comparisons, gender gaps and age components, and then each one of its selected determinants (educational level, fertility, union formation patterns, and public expenditure, culture) is studied in simple linear regressions to describe the one-to-one relationship established. The last step is the multivariate analyses (panel regressions) that will be carried out to measure (at the net of other variables) how these factors are associated altogether with activity rates.

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1. Introduction

The economic and social importance of the growing female participation in the labor market over the past twentieth century is of undoubted evidence. In the early 1990's, some Southern European countries (i.e. Greece, Spain, Italy and Portugal) had rather low rates of female participation but, simultaneously, started sharing the highest rates of increase. The steady transformation of employment patterns, as well as the increased female activity rate during past three decades, is partly the result of women's decisions to supply work, mainly determined not only by the household formation, fertility and household dissolution which have been subject to radical changes in the past few decades, but also by country specific socio-economic and institutional trends. These factors seems to be not sufficient to explain the evolution of female activity rates. We firmly believe that an important role is played by cultural factors and we make an effort towards this goal.

From an economic perspective, female participation in the labor market has been studied through the modeling of the labor supply. Traditional neoclassical models assumed that the household-head (*the breadwinner)* was representative of the totality of household preferences and, as a consequence, could exactly determine the optimal use of time and therefore the labor supply of each member (Becker 1965, Shultz 1991, Katz 1997). Under this approach, women's participation depends on the opportunity cost of working in the market (as opposed to "in the house"), which, in turn, reflects family decisions regarding time use. During the Nineties, both in the area of economic policy and feminist economics, authors collected the critics made to traditional models and explained that the decision processes within the household could be conceived as a series of interactions between its members that are resolved through negotiation processes.

As a result of the negotiation process, the final allocation of resources (including market and domestic time, activities and leisure) depends mostly on the initial bargaining power of each of the members (Mc Elroy 1990, Kooreman & Kapteyn 1990, Lundberg & Pollak 1994). This background comprehends economic (human capital, family income), social (gender roles, fertility, family structure) and institutional factors (laws and policies).

Besides this standard socio-economic approach, there are other emerging perspectives from which it is possible to interpret the participation of women in labor market

activities. This framework introduces both cultural (Fernandez & Fogli, 2006, 2009, Blau et al. 2013) and social aspects of the population. Another approach is the gender perspective, which introduces new aspects of women's subjectivity and the central role played within the family, studying women's experiences (Sollova & Baca 1999). Summarizing, an integrated approach of the determinants of female participation would include multiple variables related not only to the economic settings, but also to the family and individual social contexts in order to identify accurately which items have a major influence. To this, we add, for the first time together, as far as we know, a cultural variable[1].

This paper follows two main purposes regarding the study of female activity patterns across four countries of Southern Europe.

The first is to examine, in our descriptive analysis, the degree and evolution of female activity rates during the last thirty years, focusing on the comparison of labor force participation among countries and highlighting the observed gender and age gaps.

The second aim is to explore some of the determinants of female activity rates at an aggregated level, analyzing the relation established between these rates and several variables, such as educational attainment, fertility rates, mean age at first birth, nuptiality and divorce patterns, and some other more traditionally macroeconomic indicators such as the unemployment rates, the share of female part time employment and other institutional features, such as the public expenditure on labor market and family policies as a percentage of the GDP. The data used for the analysis were mainly drawn from Eurostat data warehouses' available on-line, integrated, where necessary, with OECD/ILO dataset.

The article is organized as follows. After a brief literature review and discussion of female activity rates across countries and over time, the paper tests, via simple linear regressions, some factors that act either depressing or stimulating female participation, including socio-demographic, economic, institutional and cultural indicators by country. In the final section, the relative combined role of these factors will be assessed through a multivariate econometric analysis.

[1] Fernandez (2007) uses country marignal effects stemming from a "cultural" variable derived from World Value Survey calculated by running a probit out of the panel of the relevant survey and plugging into the panel of microdata that she uses.

2. Literature review

Female massive incorporation in economic activity besides increasing total participation rates constitutes a sign of women condition in the society and acts raising per capita income and consumption.

Previous studies have argued that, apart from allowing women to develop a greater economic independence, increasing levels of female activity tend to support the empowerment of women by giving them a noticeable influence on family and household decisions. Thus, female labor participation is a very important aspect of women's relative economic status (Schultz 1991, Boserup 1970 cited in Goldin , 2006).

A wide number of determinants influence female participation in economic activities. This paper aims to test the role of some of these factors in Mediterranean Europe under three broader groups: the economic, socio-demo-cultural and institutional spheres.

The relevant literature studies the determinants of female labor force participation in several ways, the indicators selected for analyses vary, but generally include one or more of the following types variables: individual level, micro-variables such as demographic characteristics; institutional and economic level, macro-variables, such as the size of the welfare state, and countries unemployment rates or Gross Domestic Product; and a combination of both macro-micro level variables as in multilevel analysis. Usually, single-country level studies use micro-level variables, while international comparisons are based on macro-level variables and focus specifically on policies arrangements as diverse social, political, institutional and cultural constraints of the average female participation rate.

Elements that interact with the role of females in the labor market were introduced by Mincer (1962), Becker (1965), and Cain and Dooley (1976). Accordingly, an extended body of literature analyzed female labor supply using different sets of explanatory variables and econometric techniques, applied to cross-sectional, time-series and panel data.

Many studies demonstrate a trend showing greater female than male labor supply elasticity. It would seem in fact that when the demand for labor increases, more women are willing to enter the labor market and ready to get out in the presence of a contraction. This phenomenon has been studied in the Sixties in the United States (Tella 1964). In this research different models were estimated using in linear regressions the participation and employment rates calculated considering temporal effects. According

to the author there was a linear relationship between the different variables used and a marked elasticity of women's labor supply if compared to men. In this context, the low participation of women in the labor market derives from the existence of a greater discouragement effect.

Other authors have also focused on other elements affecting female labor supply. A significant element concerns the productive structure of the economy and in particular its level of development and tertiarization. In fact, the study of Pampel & Tanaka (1986) shows the existence of a "U-shaped relationship" between female activity rate and economic development. On the transition from an agricultural economy to an industrial one, the labor market tends to expel female labor force, while in the transition from an industrial economy to one based on the service sector, the participation of women in the labor market tend to increase. These moments lead, first, to a reduction in women's activity and, then, to an increase.

The recent increase of female activity rates in European countries has been closely linked not only to the expansion of the service sector but also to the high share of part-time jobs. Comparative studies on the employment situation of women have tried to define different regimes depending on both the flexibility and service transformation of European economies (Bettio & Villa 1998).

Other authors (Juhn and Murphy 1997) have highlighted the existence of a relationship between female participation in the labor market and household income, and in particular the husband's salary for married women. In recent years the male bread-winner type of family is competing with the emergence of several arrangements more (or less) gender balanced within the management of family and professionals. In this sense, younger and highly educated males with important positions on labor market activities could incentive young females to be workers, mothers and wives.

A greater participation of women in the labor market could be considered a considerable impetus to growth in the near future. In fact, in European countries where gender imbalances in employment rates and wages are lower, economic growth is higher and fertility is increasing (Del Boca et al. 2012). It is not just an issue concerning equal opportunities or gender equality, but about women's capacity to generate economic growth. More women at work, higher household income, increment on new jobs, and a consequent increase in consumption, a real virtuous circle. In this sense, specific public policies are needed to help women to reconcile their roles (Moreno 2002).

Following a recent stream of research in economic studies, we consider the economic system deeply integrated with what is referred to as culture, but what is weakly agreed upon in terms of shared definition. One of the first attempts to model culture was made by Carroll, Rhee, and Rhee (1994) (cit. Fernandez 2007, p. 311) and has been included since then by many authors, among which we highlight Fernandez & Fogli (2009) and Blau et al. 2013. This way of including the role of culture in an empirical analysis refers to the usage of past generation indicators about working/fertility behavior of women (see cit. above) trying to match behaviors of women belonging to "quiet revolution" period (late '70s to present, Goldin (2006) to those of women who eased the revolution in the previous period (so called "roots of revolution" in Goldin, cit.). Those and (and other authors) have been currently working to include the effect of culture, differently conceived from the effect of general socio-economic context.

3. A descriptive analysis of activity rates: international comparisons and gender gaps.

In the last decades there has been a significant growth in female labor force participation[2]. The average for the EU-15 countries of women activity rates has in fact expanded from 56.8% in 1995 to 66.2% in 2011. There is no doubt that most of the overall increase involved women, indeed, for the population as a whole the activity rate passed from 67.2% to 72.5% in sixteen years. Such evolution of female rates is in line with the objectives of the Lisbon Strategy aiming the increase of the overall European Union employment rate from 70% to 60% by 2010, though less importance seems to have been attached to gender balance in the new Europe 2020 agenda.

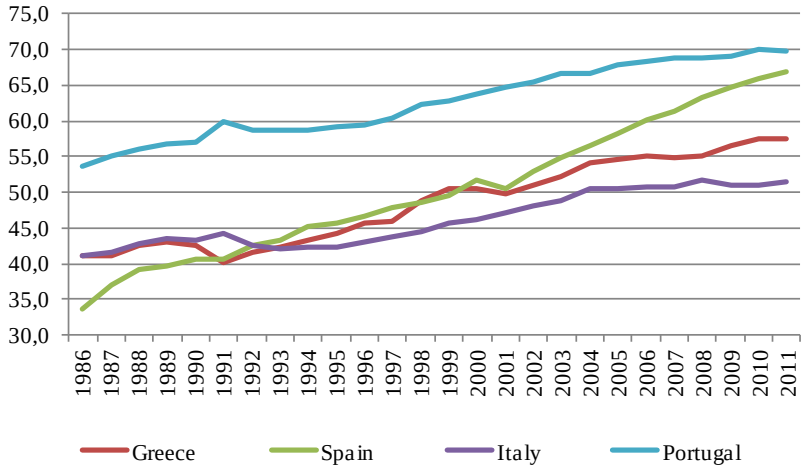
As shown in Figure 1, a common trend undergone by all Greece, Italy, Spain and Portugal is the continuous rise on female activity rates. Although the effective growth experimented during the observation period –the last twenty five years- varies considerably among these countries. In 1986 the lowest rate belonged to Spain (33.7%), Italy (41.0%) and Greece (41.1%) shared the second place, and Portugal registered the highest one (53.7%). By 2011 the ranking changed due to the remarkable improvement

[2] The economically active population (labor force) encompasses all both employed and unemployed persons. People are classified as employed, unemployed or economically inactive according to definitions of the International Labor Organization. The activity rate is the share of the population that is economically active (employed + unemployed).

of the Spanish situation: Portugal remained on the first place, Spain passed from the last to the second, and Greece went ahead surpassing Italy. In this sense, it is stressed the strong variability observed in women's activity rates in the South. While the activity rates for females aged 15-64 in 2011 were 69.8% in Portugal and 67.0% in Spain, both rates above the European average, Italy (51.5%) and Greece (57.5%) were still far from converging on such value.

Other classification can be built according to the net differences of female activity rates among countries between 1986 and 2011. The most important growth is illustrated on the transformation faced in Spain with a substantial increase of 33 percentage points, followed by Greece (16.5), Portugal (16.1) and, finally, Italy (10.4).

Figure 1. Female activity rates (15-64 years old). Selected countries, 1986-2011.



Source: *Own elaboration, Eurostat.*

Historically, women have shown lower activity rates than men. Table 1 shows female and male activity rates in 1990, 2000 and 2010 for the South European countries under examination (Greece, Spain, Italy and Portugal) and the EU-15. In 2000, the activity rate for women in the EU-15 was around 59.9%, while the rate for men was around 78.2%. By 2010, this gender gap had narrowed to around 13 percentage points due to, on one hand, the increase on female activity rates and, on the other, the constant trend followed by male rates.

Table 1. Female and male activity rates (15-64 years old). Selected countries, years 1990-2000-2010.

	Years	Females	Males	Gender gap
European Union (15 countries)	1990	-	-	-
	2000	59,9	78,2	18,3
	2010	65,8	78,9	13,1
Greece	1990	42,6	76,8	34,2
	2000	50,6	77,6	27,0
	2010	57,6	78,9	21,3
Spain	1990	40,6	77,6	37,0
	2000	51,8	78,5	26,7
	2010	65,9	80,7	14,8
Italy	1990	43,2	77,0	33,8
	2000	46,2	73,8	27,6
	2010	51,1	73,3	22,2
Portugal	1990	57,1	81,4	24,3
	2000	63,7	78,7	15,0
	2010	69,9	78,2	8,3

Source: *Own elaboration, Eurostat.*

In recent years, most markedly since the second half of the Nineties, male and female activity rates in Southern European countries have converged albeit the one for males remains at higher levels. In two decades the common pattern shared by the four countries is a remarkable rise on women's participation in the labor market, while men's activity has increased significantly in Spain and slightly in Greece, and decreased both in Portugal and Italy (Table 1).

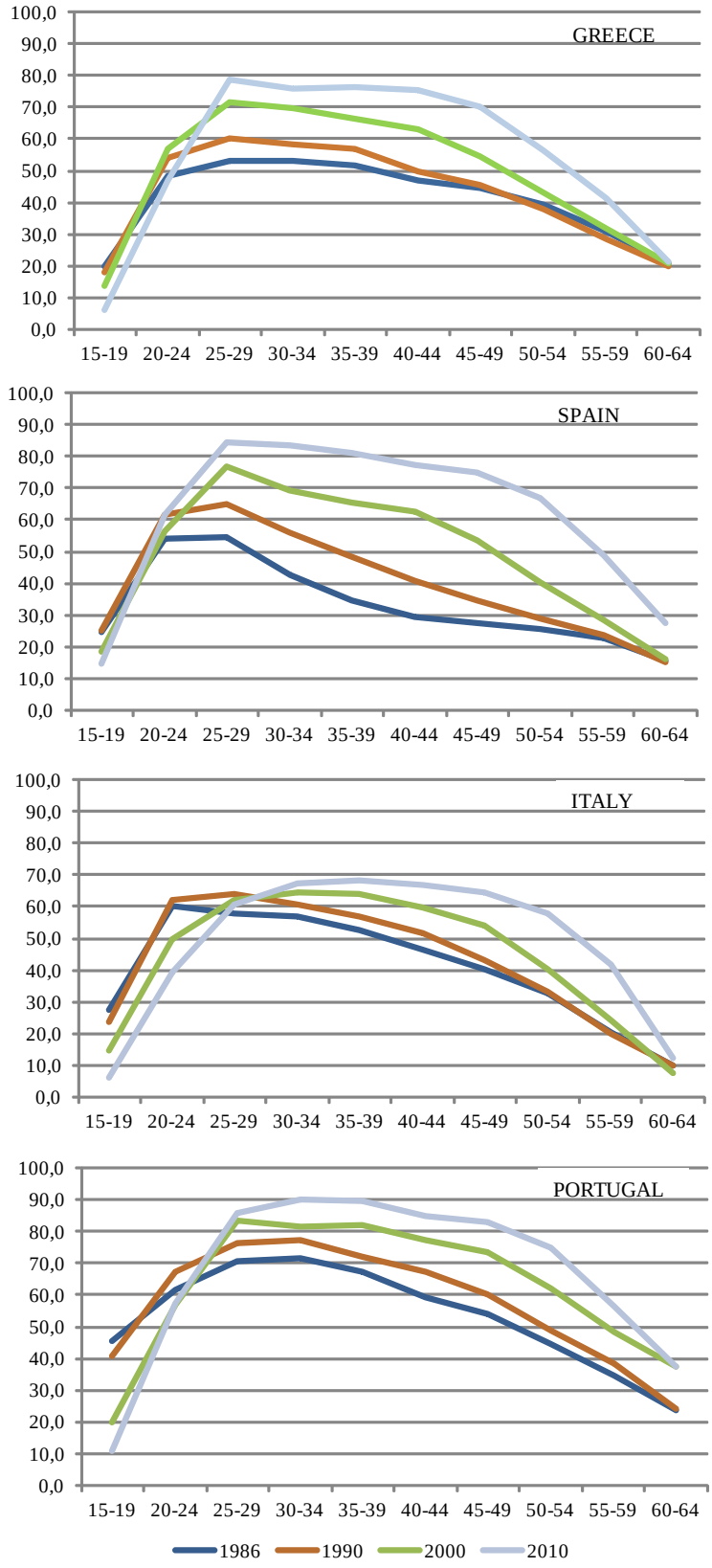
Usually, women's participation in employment is high and the gender gap low in most part of low income countries where women are less involved in paid activities outside the household. Women also tend to be more active in high income countries, where over two-thirds of female adult population participate in the labor market and the gender gap in labor force participation rates is less than 15 percent on average. This is especially true in countries with extensive social protection coverage and societies where part-time work is possible and accepted. In contrast, men's participation rates are rather stable across countries in different income groups.

In Southern Europe, recent patterns of women's labor force participation are more mixed, ranging from a low of 51.1% in Italy in year 2010, to a high of 69.9% percent in Portugal. The gender gaps in labor force participation are also highest in Greece and Italy, where men's participation rates exceed women's by over 21 percentage points.

Portugal (8.3%) and Spain (14.8%) have lower gender gaps much closer to the EU-15 average (13.1%).

Analyzing the structure and dynamics of women's activity by age (Figure 2), particularly for the youngest and the older age groups, the trend of the participation rates for females aged 15-19 and 20-24 has been decreasing, and increasing for workers aged 60-64, while the activity rates for the remaining groups have increased noticeably over the same period.

Figure 2. Female activity rates by age groups. Selected countries, years 1986-1990-2000-2010.



Source: *Own elaboration, Eurostat*

As mentioned before, the increase in the 15-64 year-olds activity rate over the last decades is mostly due to the increased participation of women in the labor market. Indeed, the growth in participation is concentrated amongst women in different age groups: women aged 25 to 39 and women aged 50 to 59. Again, the greatest improvements have been experienced in Spain with rates that had grown noticeably almost in all age groups (young females aged 15-19 are the exception) but specifically for women between 30 and 54 years old, which showed activity rates at least 42 percentage points higher in 2010 than in 1986. In this sense, the recent increase in women's activity is thus a result of changes in the participation patterns of European women of childbearing ages (Maruani 1995).

The lowest rates for the youngest are found in Greece and Italy, but the sharper decrease of female activity rates in the period under consideration is observed in Italy with two declines that were superior to twenty one percentage points for the 15-19 and 20-24 years old groups. Also Italy holds the smallest improvements regarding women's participation in labor market activities showing the slightest increases both for the average population and when disaggregating by age groups.

The ultimate objective of this analysis is the joint assessment of the effects of selected groups of variables on the countries' activity rates through a multivariate regression able to describe time and country related features of the dependent variable.

Preliminarily to this, we ran separate bivariate regressions in order to isolate and highlight the single variables impact in order to help us determining the full specification of the model. In the following sections we shall present some descriptive data by variable, as referred to in Appendix 1 for full specification of different regression equations and graphic representations.

Assuming that the controvert dynamics of the participation of female population to labor market cannot be ascribed to single (or few) variables, associated to the break of the traditionally widespread trade-off between working and childbearing, we grouped some relevant variables in four sets: socio-demographic; economic, institutional and cultural.

Socio-demographic determinants

- Educational attainment

Higher schooling levels in women can be explained in terms of efficiency by providing a greater return on human capital investment, low infant mortality, fertility and

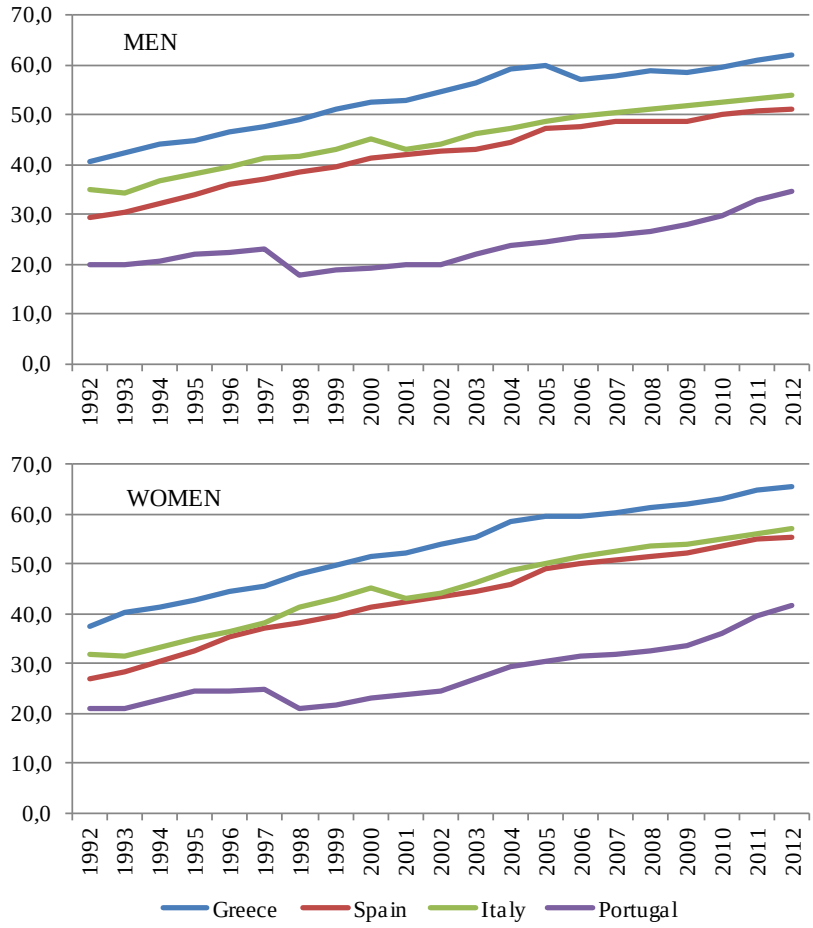
intergenerational redistribution. Studies show that in the twentieth century there was a higher relative investment in human capital of women compared to men, under the circumstance where at the same time female labor force was increasing (Schultz, 1991). Furthermore, women with more education tend to devote more time to the labor market activities (i.e. employment and search).

Figure 3 illustrates how the proportion of persons with upper secondary and tertiary education by gender in Greece, Spain, Italy and Portugal evolved in the last twenty years. In both graphics the predominant path is the permanent increase in the proportion of males and females, even if the lines for females indicate a much more marked increment if compared to males' lines and follows this cross-country order: Spain, Greece, Italy and Portugal.

When considering gender gaps on the evolution of the indicator, only in Portugal the proportion of men that achieved at least upper secondary education has been consistently lower than the same percentage for females but the trend follows the line of the rest of the countries with a growing gender gap that favors women. The difference between the female-male proportions in 1992 was a scarce percentage point, while in 2012 reached seven (7.3).

In Italy the gender gap regarding the last two ISCED educational levels was positive for men until 1999; in Spain the change was effective in 2001 and in Greece in 2006. Since these years, the proportion of women with upper secondary and tertiary education has been higher than men's. On 2012 the gap between males and females' percentage points was 4.3 for Spain, 3.7 for Greece and 3.3 for Italy.

Figure 3. Percentage of individuals with upper secondary and tertiary education by gender. Selected countries, years 1992-2012.



***Source**: Own elaboration, Eurostat.*

The results of the respective linear regression lines for the four countries under examination are showed in Appendix 1 Figure A.1. It is clear from the scatter plots that, generally, as education increases, activity rates tend also to increase. If it seems to be the case that the points follow a linear pattern well thus, as expected, there is a high linear correlation between both variables in Southern Europe. Also the values of the determination coefficients elucidate how most part of the total variation in women's activity rates (dependent variable) is explained by the proportion of females with upper secondary and tertiary education (independent variable). The lower coefficient is observed in Portugal (74%) and the higher in Greece (98.6%) with Spain (95.15%) and Italy (95.04%) in the middle.

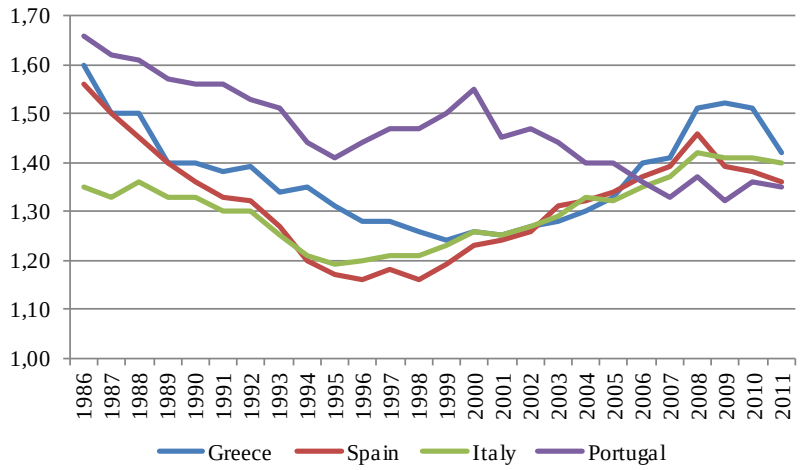
- *Total Fertility Rate*

The total fertility rate (TFR) describes the total number of children that the average woman in a population is likely to have throughout her life based on the current birth rates. The indicator for Southern European countries ranges from more than 1.6 children per woman in the second half of the eighties to around 1.2 children per woman in the Nineties (Figure 4).

Italy and Spain hold the primate as the first lowest-low fertility countries (Kohler et al. 2002, Billari & Kohler 2004) with TFRs that have fallen under 1.3 child per woman in 1993, immediately followed by Greece three years later but not by Portugal in which fertility rates have never been inferior to such value.

The evolution of fertility rates in Southern Europe underwent different paces and levels. While in Portugal the number of children per female is still declining, in Spain and Italy the rate gained some points after 1998 and initiated a slight but important growth. Four years after, this situation was experienced also in Greece.

Figure 4. Total Fertility Rates. Selected countries, years 1986-2011.



Source: *Own elaboration, Eurostat*

As stated previously, several studies corroborate the relationship between fertility and women's participation in labor market activities. Childbearing is a time intensive domestic production activity that has usually kept women away from employment. The high costs (including the opportunity cost) that involve replacing mother's care creating a support net in schools, kindergartens, among others, reduce incentives to reverse this situation, especially when the quality of such services is involved (Del Boca & Vuri. 2007).

Figure A.2. (see App. 1) shows the relationship between the total fertility rate and female labor force in Greece, Spain, Italy and Portugal for the 1986 and 2011 period. It

is not clear the relationship between both variables, the negative slope is only observed in Portugal (R^2=56%) and Spain (R^2=31.36%), indicating that in these countries a higher total fertility rate is somehow linked to a lower participation rate of women in the labor market and vice versa.

According to Rosenzweig & Wolpin (1980) the negative relationship between these variables is particularly salient for young women and tends to revert at older ages, as in the life cycle model. This could be the reason behind a not so clear interrelation between female activity and a synthetic measure as the total fertility rate. An analysis of an indicator such as the mean age at childbirth that mixed both having children and its calendar time may result much more accurate.

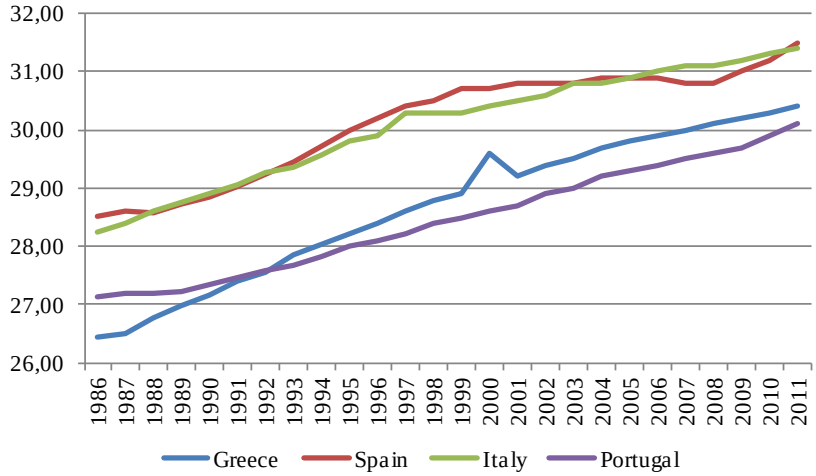
- *Mean age at childbirth*

The fertility rates since the late 1960s reflect the considerable change in family establishment in Western countries. But there are also significant changes in age at first childbirth that have accompanied fertility declines. The Figure 5 shows an upward trend in age at entry into motherhood for all Southern Europe. The average age of mothers who gave birth in 1986 was 28 years. In the three decades that followed, the average age of mothers at childbirth augmented consistently to reach an elevated 30 years in 2011.

This illustrates a strong postponement of first childbirth among younger women in Greece, Spain, Italy and Portugal, where the average age of mothers at childbirth increased by 3 to 4 years on the last fifteen years. This postponement has been followed by an increasing number of births to women in their thirties observed since the end of the Nineties in Spain and Italy, 2007 in Greece and four years later in Portugal.

The postponement of first childbirth may be seen in connection with the sharp growth in the proportion of women with a higher education among younger women (Billari & Filipov 2004). The delayed birth-timing has occurred at different paces in Southern Europe and, surely, education has had an increased effect on childbirth mean ages. Differences in these values have divided the South in two: first, Italy and Spain where mean age at childbirth has always been superior (over 28 years since 1986), and second, Greece and Portugal, with a still lower timing and a smaller amount of mothers who gave birth at 30 years of age or over.

Figure 5. Mean age at childbirth. Selected countries, years 1986-2011.



Source: *Own elaboration, Eurostat*

As anticipated on the previous section and contrary to what has been observed for fertility rates, the relationship between female activity rates of Southern European countries and mean age at childbirth resulted strongly positive. Considering each country the more robust association is detained by Portugal (94.77%), while the weaker one is registered in Italy (67.85%), with Greece (91.73%) and Spain (90.43%) in the middle (see App. 1 A.3.).

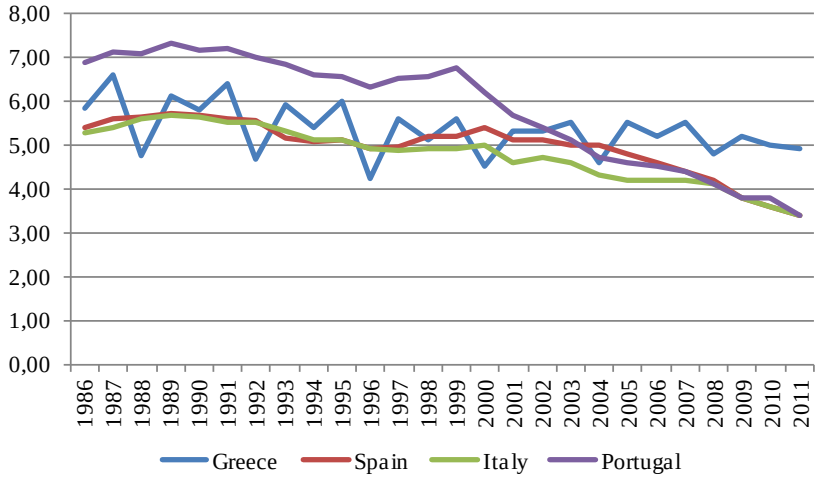
- *Crude Marriage Rate*

In this section are presented developments that have taken place in relation to family formation and dissolution through an analysis of marriage and divorce indicators, focusing on how both could be linked to the evolution of female involvement on the labor market. Marriage has long been and is still considered to mark family formation. Recent demographic data show that the number of marriages per 1,000 inhabitants has decreased within the European countries in recent years, while the number of divorces has increased.

Also the South has experienced this general trend (Figure 6). The crude marriage rates in those nations declined from 6-7 marriages per 1,000 inhabitants in 1986 to 3-4 marriages by 2011, a reduction of around 3 marriages per 1,000 inhabitants and a consequent overall decline of the absolute number of marriages.

Figure 9 shows that in 2011 the crude marriage rate was highest, among Southern Europe, in Greece (4.9 marriages per 1,000 inhabitants). The lowest crude marriage rates were shared in the rest: Italy, Spain and Portugal (3.4 marriages per 1,000 inhabitants).

Figure 6. Crude Marriage Rates. Selected countries, years 1986-2011.



Source: *Own elaboration, Eurostat*

Women have made important advances in labor markets, differences between single and married women activities are not always as sharp as they used to be. The labor force participation rate of married women has also risen. But marital status considerably affects the decision to participate, with married women having a lower participation rate than unmarried women.

Women's labor-market choices are commonly influenced by family life courses and circumstances. Changes in marital status or in partner conditions, transform the organization of time and financial resources within the household. Generally, even employment rates are lower in case of women living in couple households. Regarding gender, men rates have constantly tended to increase when they live in couple, while those of women tend to decrease.

In Figure A.4. (see App. 1.) the negative slope of the regression line corroborates what explained, female activity tends to decrease as the crude marriage rate increases, which is no particular surprise. The percentage of variance explained by marriage trends is higher in Portugal (78.25%) and Italy (68.54%), followed by Spain (56.42%), and much lower for Greece (22.36%).

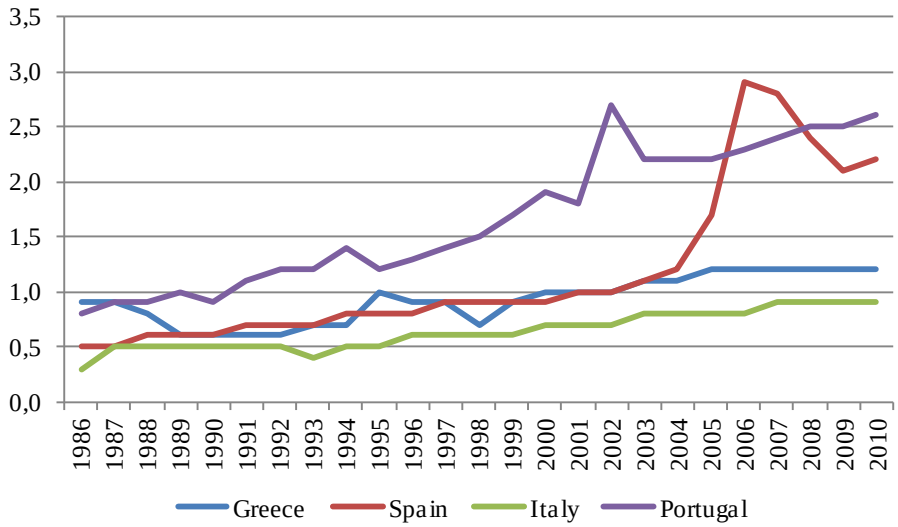
- *Crude Divorce Rate*

Over the same period in which marriage rates declined, these unions became less stable, as reflected by the rise in crude divorce rates in Europe. Even the countries of the South, which have traditionally showed the lowest divorce rates of the EU, have lived an evolution to higher marriage instability.

The lowest crude divorce rates (see Figure 7) were found in Italy with crude divorce rates below one divorce per 1,000 inhabitants (0.9), while Greece (1.2 in 2009) also recorded relatively low crude divorce rates. The highest crude divorce within the South rates were recorded in Portugal (2.6 divorces per 1 000 inhabitants in 2011) and Spain (2.2).

A divorce process implies some type of household instability that leads many women to enter into the job market. Divorce has an economic impact on women (García Pereiro & Solsona 2011): not all women receive an allowance from the former partner for child support. Suddenly, their quality of life is diminished by the absence of the entire husband income, particularly if it was the only one perceived. Hence, the remaining alternative is to fulfill immediately the income lost through labor market entrance. Indeed, the participation of married women in paid work constitutes a kind of protection against a possible union breakup. Figure A.5. (see App. A.1.) describes the above, showing a powerful positive link between female activity and divorce rates in Portugal, Italy, Spain and Greece.

Figure 7. Crude Divorce Rates. Selected countries, years 1986-2011.



Source: *Own elaboration, Eurostat*

Economic determinants

-Unemployment

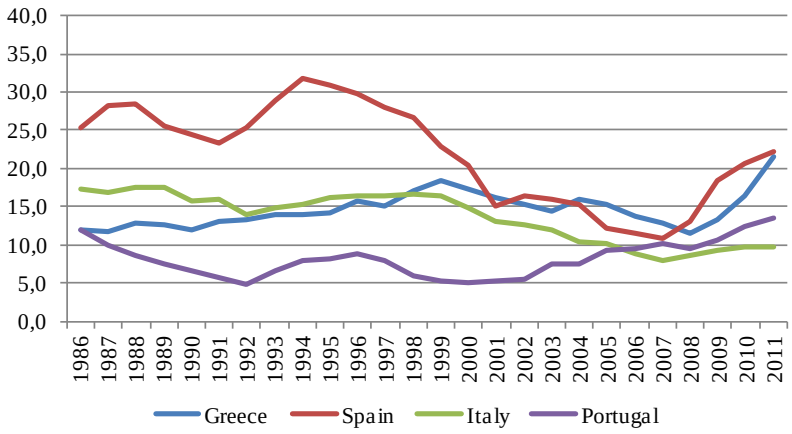
Total unemployment rates have varied widely across Mediterranean Europe on the period under examination. Until 2005 the lowest rates were recorded in Portugal (even lower than the EU15 average), from 2005 to 2011 Italy have showed lower

unemployment rates than Portugal. Spain is the country with the highest unemployment rates of the area.

In 2011, the female unemployment rate varied between 9.7% and 13.5% in Italy and Portugal, respectively; and 22.3% - 21.6% in Spain and Greece (Figure 8). The countries of the area share the rose on female unemployment rates after the economic crisis, already visible since 2007. Ten years earlier, the situation was even worse in Spain (28.1%), Italy (16.5%) and Greece (15.1%) and considerably better only in Portugal (7.9%).

As shown in Table 2 female unemployment rates in Southern Europe have been systematically higher than males. Differences between both rates evidence smaller gender gaps in Portugal for 1990-2000-2010 and in Italy and Spain for the last year under observation. Larrañaga & Echebarría (2004) state that there is a high social tolerance of female than male unemployment perhaps because in the South still persists the idea that women's participation in the labor market is an option, as valid as been devoted exclusively to family care.

Figure 8. Female unemployment. Selected countries, years 1986-2011.



Source: *Own elaboration, Eurostat*

Table 2. Female and Male unemployment rates (15-64 years old). Selected countries, years 1990-2000-2010.

	Years	Females	Males	Gender gap
Greece	1990	12,0	4,4	-7,6
	2000	17,3	7,6	-9,7
	2010	16,4	10,1	-6,3
Spain	1990	24,4	12,1	-12,3
	2000	20,4	9,5	-10,9
	2010	20,6	19,8	-0,8
Italy	1990	15,8	6,5	-9,3
	2000	14,9	8,4	-6,5
	2010	9,7	7,7	-2,0
Portugal	1990	6,7	3,4	-3,3
	2000	5,0	3,2	-1,8
	2010	12,5	10,4	-2,1

Source: *Own elaboration, Eurostat*

Some structural conditions of the labor market when perceived by women may influence their decision to enter the labor market, at least while they wait for the emergence of better opportunities. In the case of unemployment, high rates that discourage women activity reflect such condition. As represented on Figure A.6. (see App. 1) there is a strong negative association between female unemployment rates and women participation only in Italy with an 86.5% R square value. In Spain this association exists but it is significantly weaker (47.9%).

-Part time employment

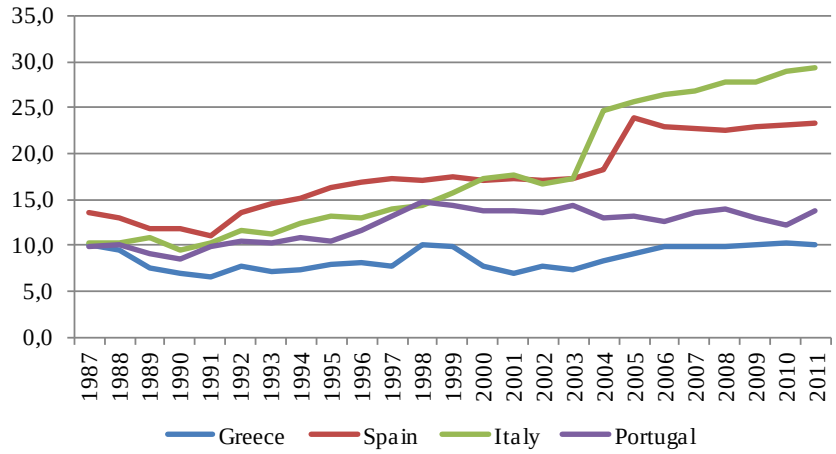
Historically, part-time employment has remained primarily a female domain. In the European Union (EU-15), in 1995, 4.7% of men worked part-time while the percentage of women was to 31.3%. In the South, the data presented on Table 3 and Figure 9 confirm that even if part-time employment is much less important than in most European countries, also here part-time work is more prevalent in women.

Among Mediterranean countries is observed a clear trend in which Spain and Italy hold the highest proportion of part-time female employment, while the lowest is registered in Portugal and Greece. By 2011 the percentages were 29.3% and 23.4%, respectively, in Italy and Spain; and 13.7% and 10% in Portugal and Greece (Figure 9).

The part-time work in Southern Europe is comparatively reduced than in Northern Europe, and so far has not been considered as a valid option for compatibility work and family conciliation. However, as shown in Table 3, this type of employment is expanding more rapidly among female population (mostly in Spain and Italy) and is widening the already existent gender gaps. This type of job offers the possibility to

reconcile work and family, without forgetting labor market activities to favor family issues (Mínguez 2005). One of the most important issues relating to part-time work is whether it is voluntary or if accepted by the inability to find a full time job.

Figure 9 Percentage of part-time employed females. Selected countries, years 1987-2011.



Source: *Own elaboration, Eurostat*

Table 3. Percentage of females and males with part-time jobs. Selected countries, years 1990-2000-2010.

	Years	Females	Males	Gender gap
Greece	1990	6,9	1,9	-5,0
	2000	7,7	2,5	-5,2
	2010	10,2	3,4	-6,8
Spain	1990	11,9	1,5	-10,4
	2000	17,0	2,7	-14,3
	2010	23,1	5,2	-17,9
Italy	1990	9,4	2,2	-7,2
	2000	17,3	3,7	-13,6
	2010	29,0	5,1	-23,9
Portugal	1990	8,6	2,4	-6,2
	2000	13,7	3,4	-10,3
	2010	12,3	4,9	-7,4

Source: *Own elaboration, Eurostat*

The results of the respective linear regression lines for the four countries under analysis are shown in Figure A. 7 (see App. 1.). It is comprehensible from the scatter plot that as the proportion of part-timer women grows activity rates tend also to increase. The diversity of the determination coefficients values in Southern Europe elucidates how most part of the total variation in women's activity rates is explained by the proportion of females working part-time in Italy (91.7%) and Spain (89.9%). The lower coefficients are observed in Portugal (58.3%) and Greece (33.8%).

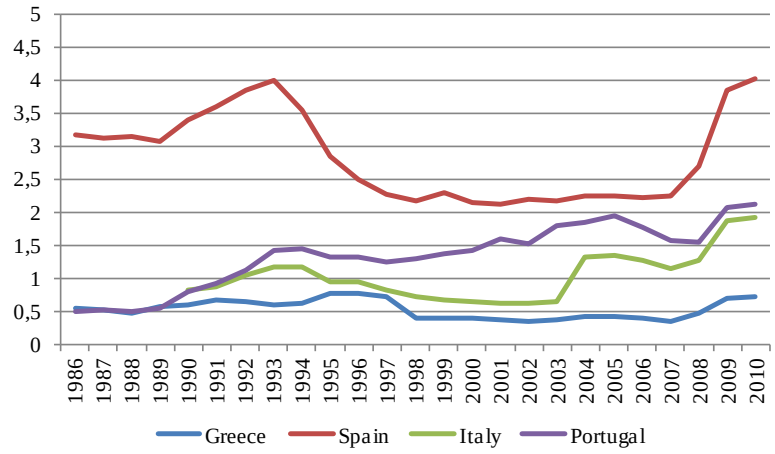
Institutional determinants

-Public expenditure on Labor Market Policies

Policy interventions aim to provide support to unemployed persons and other groups facing difficulties while trying to joining or re-joining into the labor market. Conventionally, the largest part of these expenditures goes to training, employment incentives, support employment and rehabilitation and direct job creation.

In 2010, public expenditure on labor market policies in the European Union was equivalent to 2.2 % of the total EU-27 Gross Domestic Product. In Southern Europe there is considerable variation between states (Figure 10). Labor Market Policies expenditure has been consistently highest in Spain above the level observed in all other countries consuming between 2.12 and 4.03 % of GDP. However, other countries spent far less, less than the overall EU average. It is noticeable one position with the most low-spending country has been Greece with a maximum proportion of expenditure based on its GDP of 0.78%.

Figure 10. Public expenditure (%GDP) on Labor Market Policies. Selected countries, years 1986-2010.



Source: *Own elaboration, Eurostat*

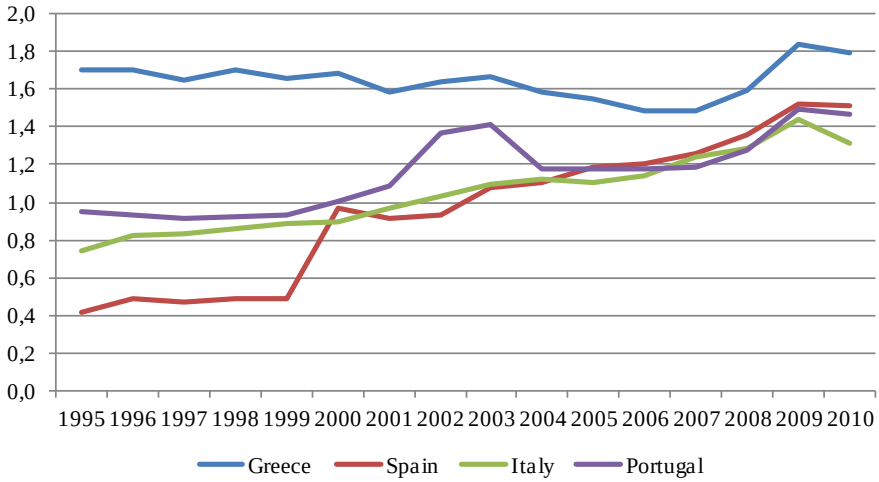
Regarding the association between women's activity and public expenditure on Labor Market Policies (Figure A. 8 (see App. 1), the computed values of the R^2 attributes an important role to it only in Portugal (80.61%). More specific data about labor supply measures for women is needed to prove that the policy makers effectively encourage women to enter the labor market and remain economically active, among these the most important policies are those aiming at the promotion a gradual withdrawal from productive activities, while balancing working and private lives.

- *Public expenditure on Family/Child policies*

The analysis of the public expenditure on Family/Child allowances in relation to the measure of female labor force participation is fundamental for the South and aims at not neglecting the strong relationship between childbearing, institutional support and employment through policies that conciliate work and family life.

Figure 11 show little convergence, the nearest are Spain and Portugal, despite the efforts of the Union intended to influence national family policies with the European framework. Even if the graphic shows some variation on the expenditure of family policy programs as percentage of GDP, family/child interventions have increased in all countries until 2009. The Spanish case deserves to be highlighted as the one who registered the superior growth on the area, passed from an expenditure of 0.4% of the GDP in 1995 to 1.5 in 2010.

Figure 11. Public expenditure (%GDP) on Family/Child Policies. Selected countries, years 1995-2010.



Source: *Own elaboration, Eurostat*

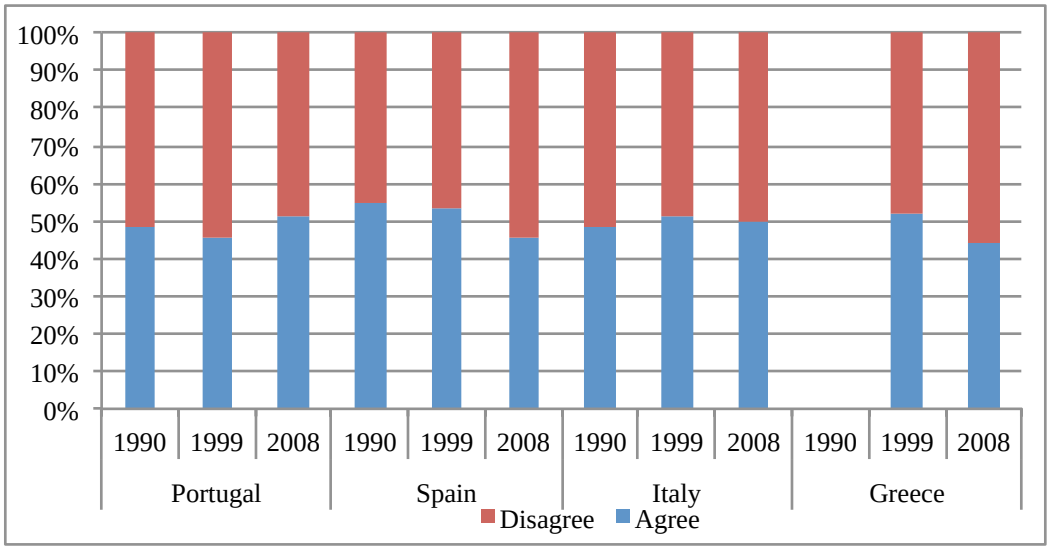
Public policy interventions, such as childcare subsidies and paid parental leaves, can incentivize female activity rates. Thus, substantial policy reforms and a greater investment on the public budget in these areas could reduce most of the gap between women and men participation rates. The results represented on Figure A.9 (see App. 1) confirms this connection which seems to be stronger in Spain (R^2=92.19%) and Italy (R^2=87.71%), followed by Portugal (R^2=67.93%) and not important at all in Greece (R^2=1.4%).

Cultural determinants

- *Personal fulfillment as a worker*

In this descriptive analysis we calculated a cultural proxy indicator upon a variable drawn from the European Values Study[3] (out of four waves of 1981, 1990, 1999, and 2008, we picked only the last two because of data limitations for Greece). We built a cultural indicator with the proportion of females that declared to agree with the following statement "Being a housewife is as fulfilling as being employed".

Figure 12. Opinion on "being a housewife is as fulfilling as paid job"



Source: *Own Calculation, ESV*

Notwithstanding the short time span considered, it is possible to spot a slow though unstable change in the perception of private/professional status of women regarding their role in both the private and public sphere (see Figure 12). Yet, the most striking element is the widely spread perception of autosegregation (or discouraging effect upon a market job choice) women operate on themselves and the sticky floor from which this attitude is hard to be detached.

As for the rest of afore studied "standard" variables, we also examined the cultural effect on Female Activity Rates (FAR). As shown in Figure A. 10 (see App. A.1) a strong positive relationship is observed in Spain, for the 1990-2010 period, and in Greece, for the 1999-2010 period. Portugal presents a weaker link with a no completely linear association, while in Italy the values seem not to be related at all.

[3] Data were available with limitations. See methodological paragraph.

Table 4. Bivariate effects' summary box.

Indicators	Greece		Spain		Italy		Portugal	
Socio-demographic indexes:								
Educational attainment	98,6%	+	95,1%	+	95,0%	+	74,0%	+
Total Fertility Rate	0,1%	-	31,4%	-	0,9%	+	56,0%	-
Mean age at childbirth	91,7%	+	90,4%	+	67,8%	+	94,8%	+
Crude Marriage Rate	22,4%	-	56,4%	-	68,5%	-	78,2%	-
Crude Divorce Rate	74,4%	+	76,2%	+	92,3%	+	92,6%	+
Economic indexes:								
Consumer Price Index	93,5%	+	99,0%	+	90,4%	+	95,8%	+
Female unemployment rate	23.5%	+	47.9%	-	86.5%	-	7.9%	+
Female part-time employment	33,8%	+	90,0%	+	91,7%	+	58,3%	+
Female employment service sector	91,3%	+	98,5%	+	85,3%	+	93,2%	+
Male Salaries	89,9%	+	92,3%	+	93,2%	+	96,0%	+
Institutional indexes:								
Public expenditure on LMP	15,4%	-	6,7%	-	24,5%	+	80,6%	+
Public expenditure on FCP	1,4%	-	92,2%	+	87,8%	+	67,9%	+

4. Multivariate analyses: methodology and results

While single-country level studies use micro-level variables, macro-level studies focus on time series aggregated data. Considering panel data, the determinants selected for the analyses on Female Activity Rates (FAR) vary from study to study, and usually include one or more of the following groups: demographic, economic or socio-economic, institutional (public policies) and cultural variables.

Following Jaumotte (2003) findings for OECD countries until 2001, we empirically test the effect of selected groups of variables on female activity rates in Greece, Spain, Italy and Portugal over the recent period (2000-2011). Due to data limitations on the longitudinal data-set of the European Values Survey for Greece, which begins to participate on 1999, the initial period considered on the descriptive statistics (1986-2011) was reduced in order to obtain a strongly balanced panel.

The econometric estimations allow quantifying the contributions of each group of selected variables in female activity rates in the countries under observation. Thus, to analyze temporal and cross-country patterns we run four single specifications with heteroskedasticity-consistent standard errors, one for each group of variables. The first model introduces four demographic indicators as independent variables: Total Fertility Rate, Women's Mean Age at Childbirth, Crude Marriage Rate and Crude Divorce Rate. The second one includes three economic variables: the percentage of females with upper

secondary and tertiary education, the male unemployment rate and the percentage of females employed part-time. The institutional indicators regarding public expenditure on Labor Market Policies and Family and Child Policies (as % of the GDP) were considered on the third model. And, finally, we used the percentage of women who agreed with the statement: "being housewife as fulfilling as paid job" (d057 ESV, waves 1990, 1999, 2008) as a proxy for the cultural-values-sphere of female participation on labor market activities. As standard in most econometric analyses, the variables included on the single and final specifications were transformed into natural logarithms to stabilize the variance.

The results of the Hausman tests help us to decide accurately the introduction of country fixed or random effects regressions in each specification. If country fixed effects were corroborated, we tested for the inclusion of time-dummies. Contrarily, if the test was positive for random effects, we tested it vs. simple OLS regression using the Breusch-Pagan Lagrange multiplier (Baum 2006). Based on the former, we run four country fixed effects models without time dummies including the final specification. The only random effect regression needed regards the institutional group of variables.

Table 5. Results from Panel Analysis- Dependent Variable: Female Total Activity Rate-1999-2011

		(1)	(2)	(3)	(4)	(5)
Demo_Var	TFR	.242***				-.027
		(.088)				(.100)
	CMARR_R	-.193***				.007
		(.054)				(.052)
	CDIVOR_R	.083***				.063***
		(.021)				(.018)
	AGE1CHILD	.507				.790
		(.624)				(.710)
Econ_Var	EDU_ATT		.019			.101**
			(.027)			(.044)
	UNEM_M		.071***			.062***
			(.148)			(.013)
	PART_EMP_F		.196***			.033
			(.032)			(.030)
Instit_Var	EXP_LMP			.052**		
				(.021)		
	EXP_CP			.104***		
				(.025)		
Cult_Var	HOUSEFILL				.113***	.082***
					(.023)	(.023)
	_CONS	2.51	3.29	3.67	3.67	5.85

(1), (2),(4), (5): FE without time effect. Std error in brackets.
(3): RE no OLS

Table 5 shows the results of the five FAR specification of our model on the sets of demographic, economic, institutional and cultural variables considered. The fixed effect model for the demographic set (specification (1)) shows significant estimates for three of the four variables considered: the total fertility rate and the crude marriage rate with negative effects, and the crude divorce rate that excerpts the only positive demographic effect on female participation rates. The economic specification (2) with three variables indicates a positive and significant relationship between FAR and both male unemployment rates and the proportion of females on part-time employment, high female educational levels were not significant. The cultural proxy coefficient has a positive influence on our dependent variable (4) and is very significant as well. Though we detected a very slow evolution in the change of the cultural value, we may assume that efforts towards a generalized positive evaluation of the economic role of women will encourage women to participate in labor market and men to accept the dual role of women as well as they do for male peers.

The random effect estimates (3) of the institutional set are both positive and significant on the participation equation. Therefore, it is possible to state that redirect some of the public expenditure towards female work friendly policies would help to increase an active participation in a self-reinforcing effect on employment and economic growth.

The fixed effects final specification (5) does not include the group of policy indicators; it only considers partial specifications in which this type of model was needed. When allowing for demographic, economic and cultural effects on female participation rates, significant and positive effects are maintained for the crude divorce rate, male unemployment rates and the cultural variable. Additionally, the percentage of highly educated women gains significance.

Concluding remarks

This paper describes the main features of women's labor force participation in four Southern European countries as Greece, Spain, Italy and Portugal, and analyses the interactions of a number of socio-demographic, institutional and economic factors with female activity rates over the period 1986-2011.

Through this description, we acknowledged the need for an *integrated approach* of the recognized different determinants to the interpretation of different performances of

increases and reductions in the female labor force across the selected European Mediterranean countries.

Our empirical multivariate analysis investigated the determinants of female activity based on panel data regressions for our four Southern European countries over the period 1999-2010, which is common to the totality of the indicators available. The potential determinants of female participation on the labor market thus included measures of public expending on labor market and family policies and other economic indicators. Also other potential socio-demographic determinants of the activity rates, already explored on the descriptive section, such as the level of female education, marriage, fertility and divorce rates and mean age at childbirth. Finally, our attention to our cultural variable remarked the strong interaction between the social context and the economic performance for the female labor market.

A possible suggestion for this integrated assessment would encompass some of the labor market policies and family/child policies to be devoted to this cultural change. Indeed, this would be a challenging and not at all easy task, but we believe it's still part of that "quiet revolution" recognized by C. Goldin started in the '70s. The ultimate objective was to seize the joint action of different and diverse determinants which all either push and hinder the participation of women to labor market, trying to enucleate general relations and country specific relations in order to understand what can be the potentially correct leverage (individually or communitywide) upon which a powerful intervention can be built to boost female empowerment and participation. We shall put new efforts in this direction in our future research prospects.

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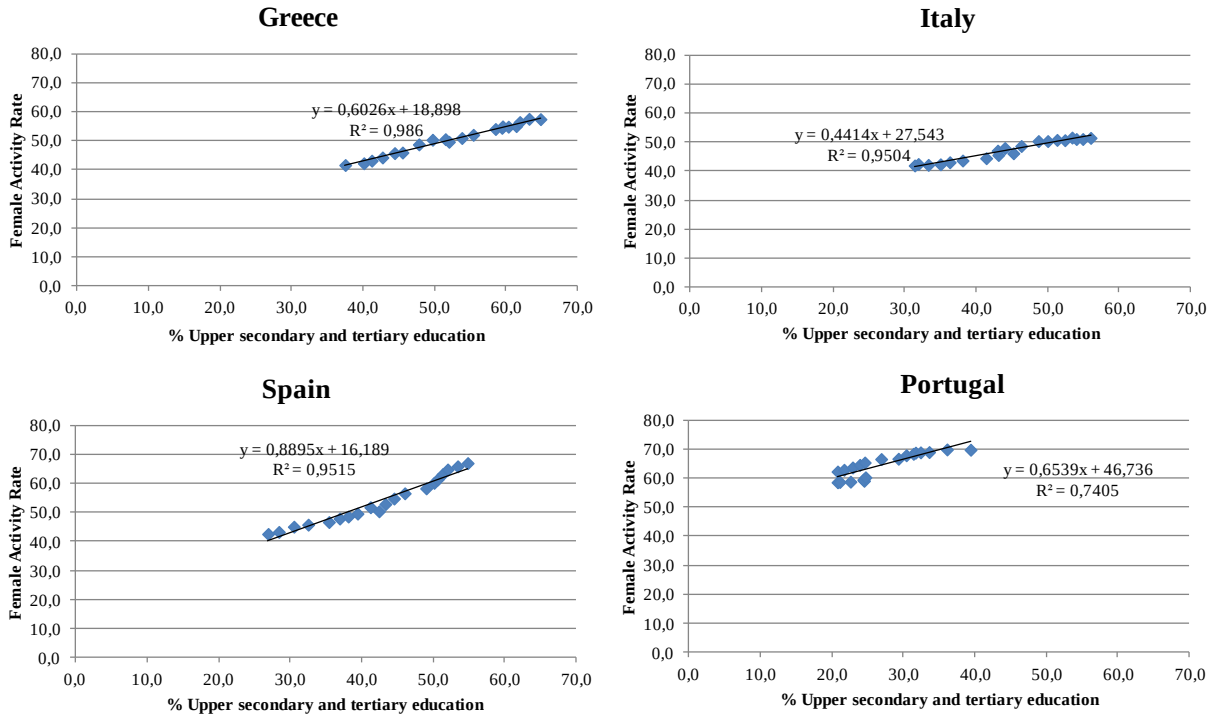
Appendix 1

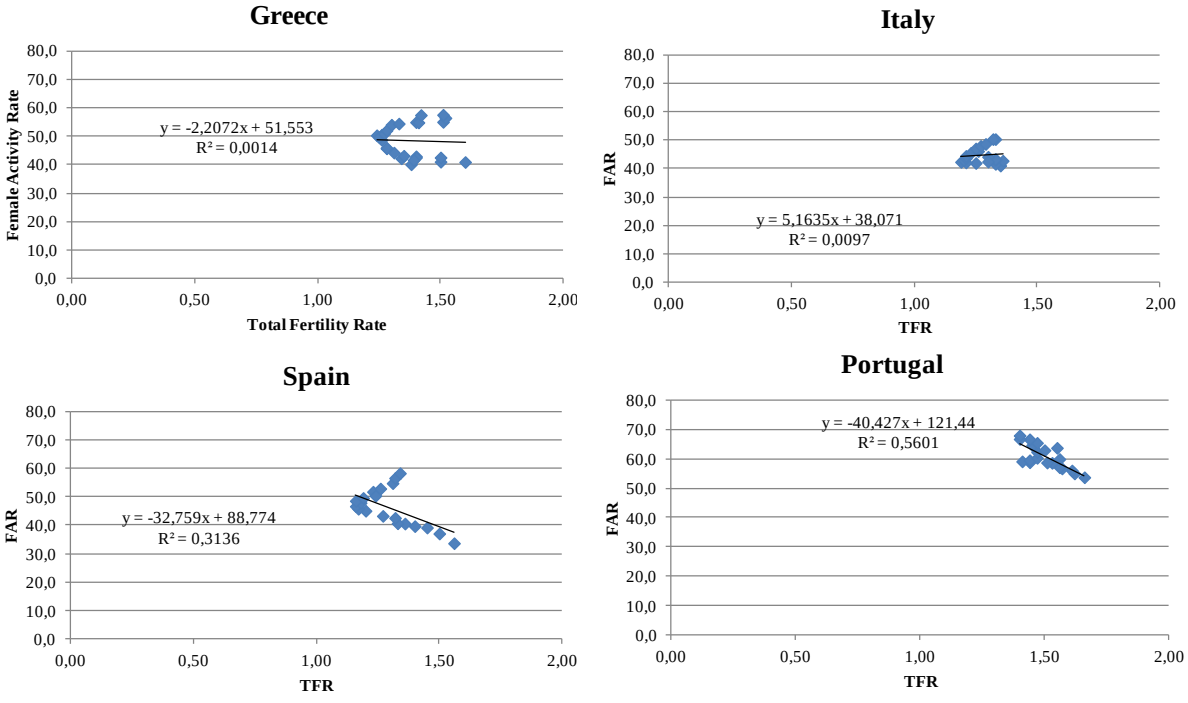
Graphs and equation for female activity rates (FAR) regressed on selected variables in SE

Figure A.1. FAR on educational attainment (years 1992-2011).



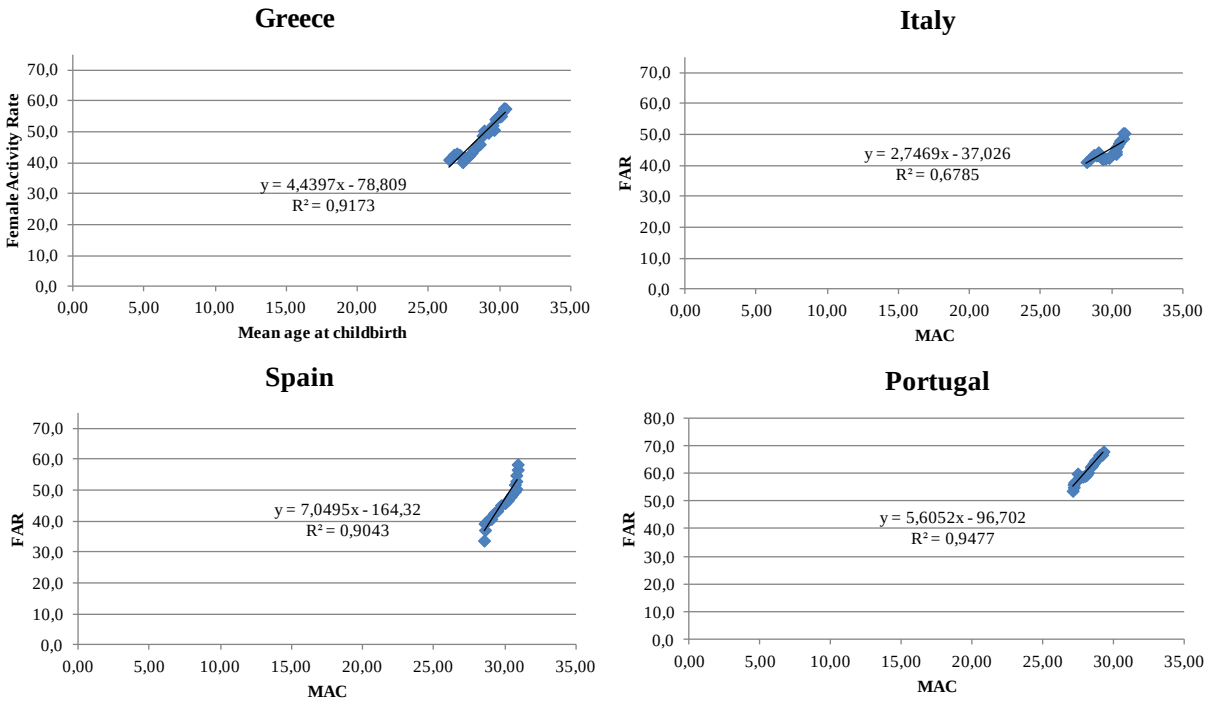
Source: *Own elaboration, Eurostat*

Figure A.2. FAR on total fertility rates (years 1986-2011).



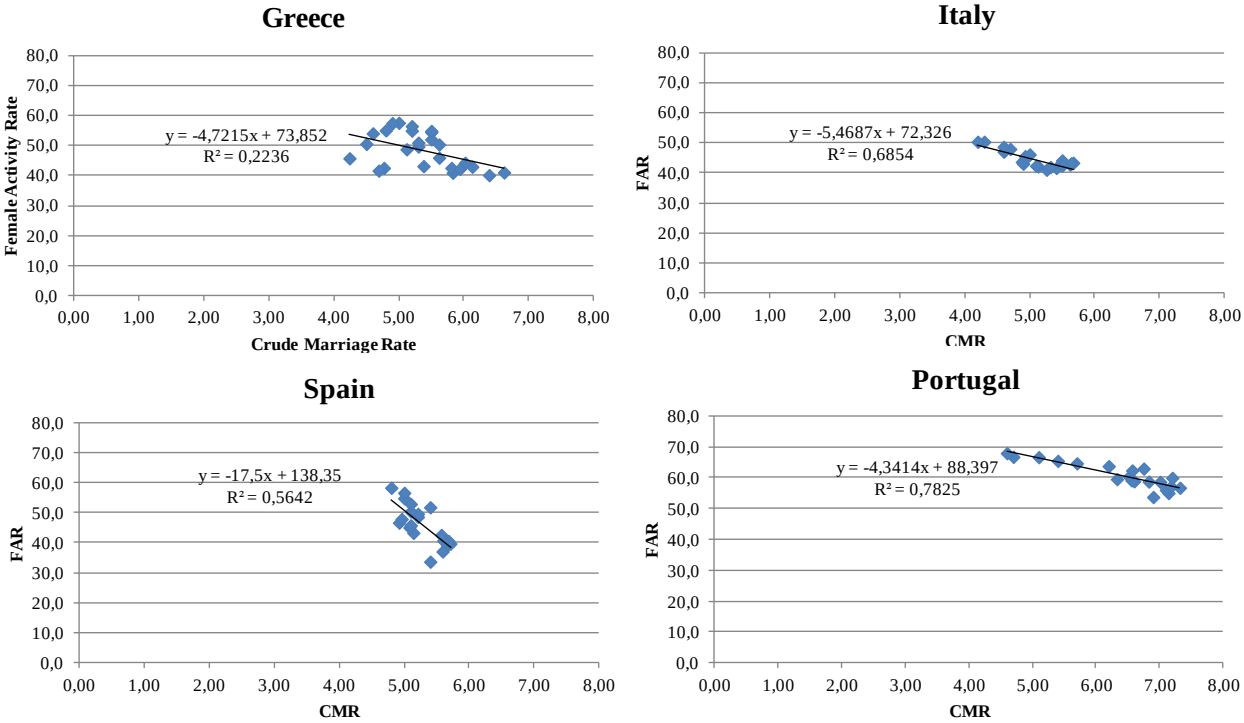
Source: *Own elaboration, Eurostat*

Figure A.3. FAR on Mean age at childbirth (years 1986-2011).



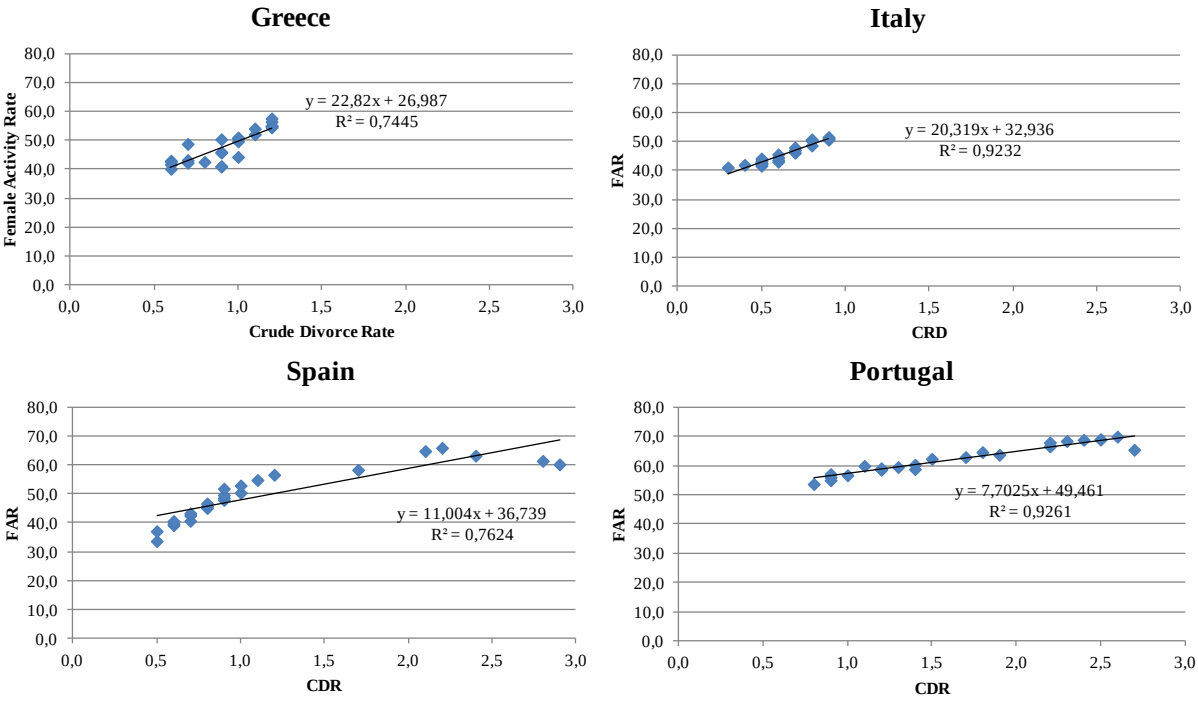
Source: *Own elaboration, Eurostat*

Figure A.4. FAR on Crude marriage rates (years 1986-2011).



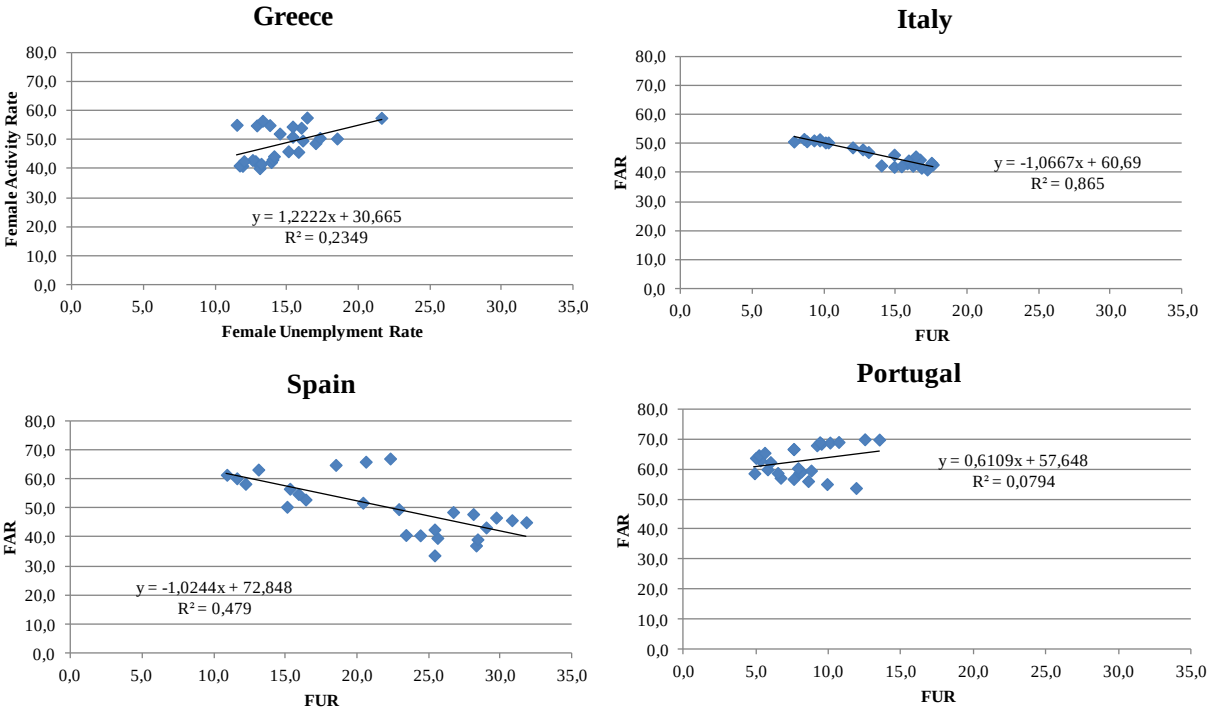
Source: *Own elaboration, Eurostat*

Figure A.5. FAR on Crude divorce rates (years 1986-2011).



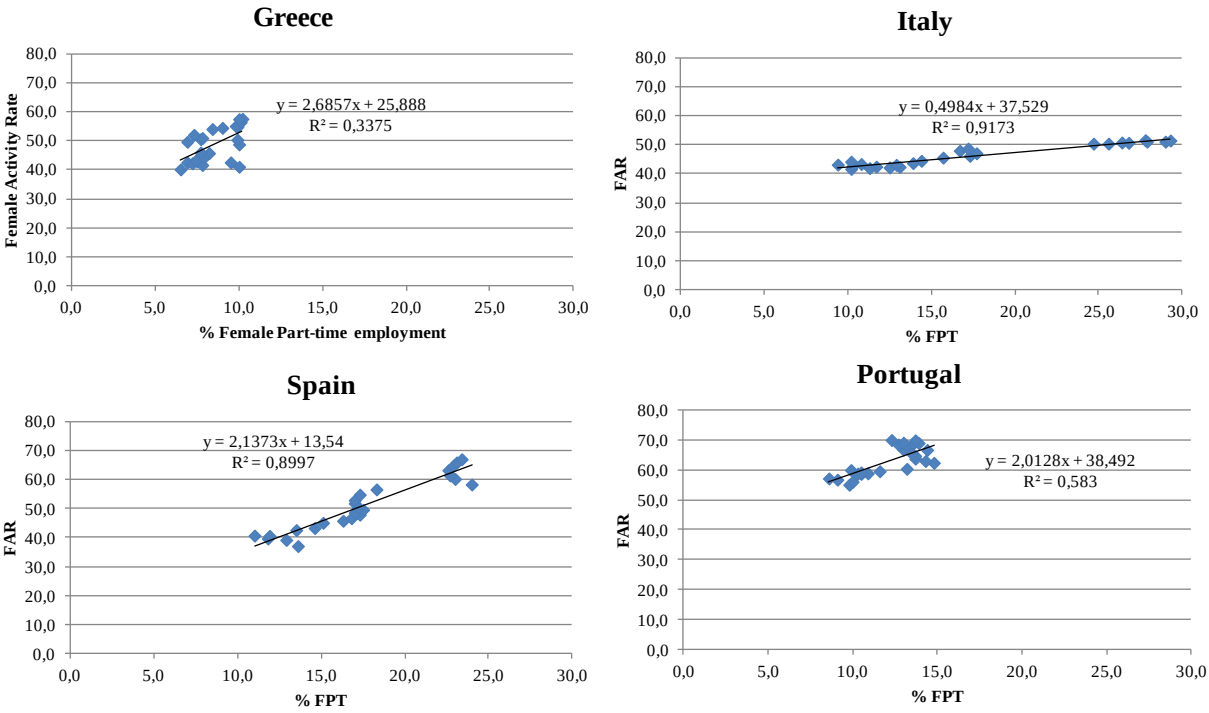
Source: *Own elaboration, Eurostat*

Figure A.6. FAR on unemployment rates (years 1986-2011).



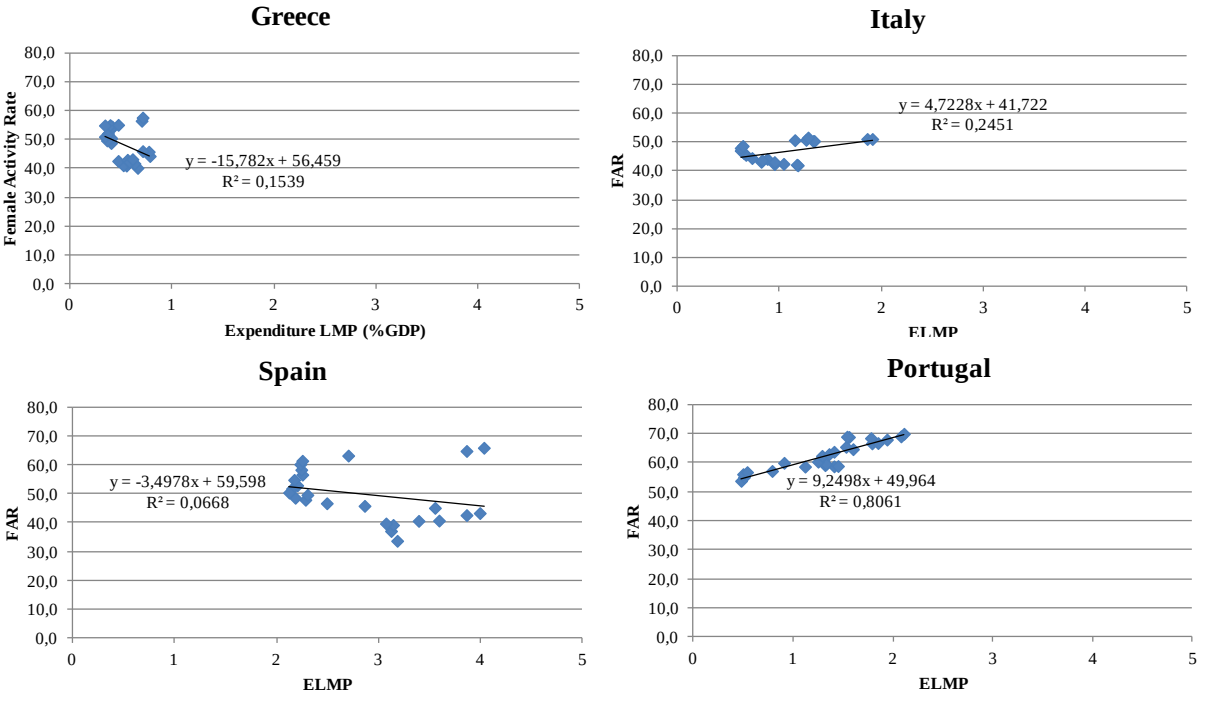
Source: *Own elaboration, Eurostat*

Figure A.7. FAR on share of part-time employed females (years 1987-2011).



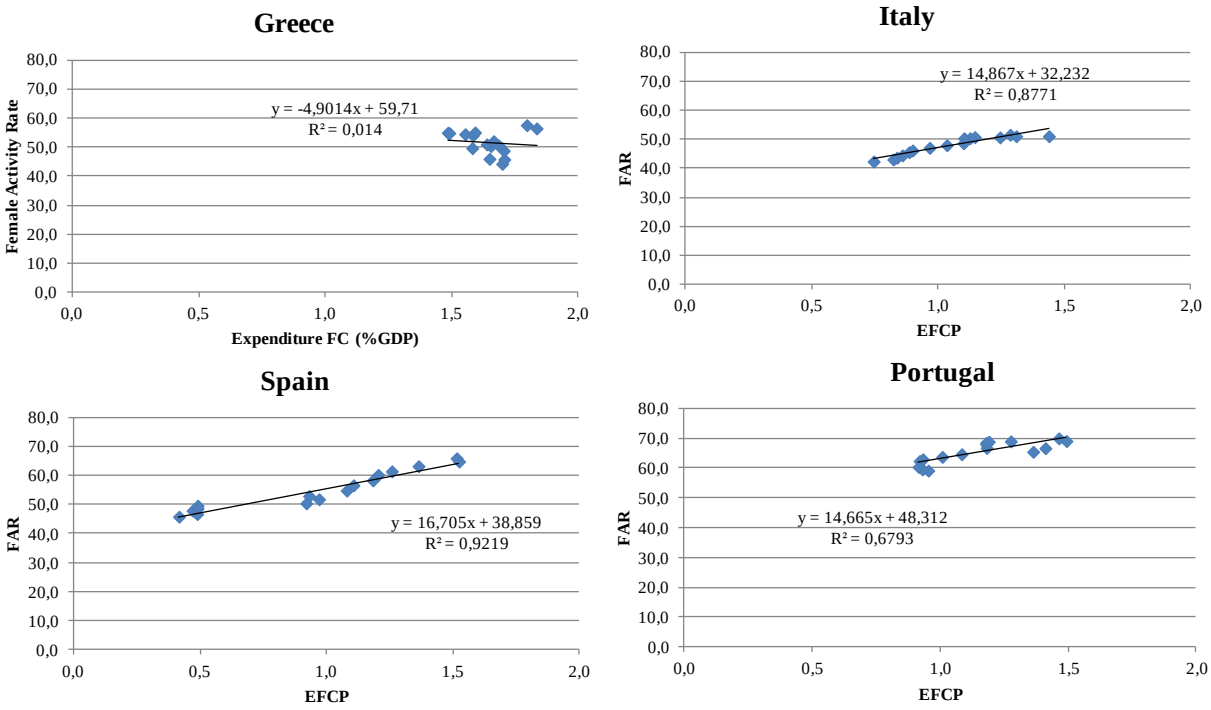
Source: *Own elaboration, Eurostat*

Figure A.8. FAR on expenditure (%GDP) on Labor Market Policies (years 1996-2010).



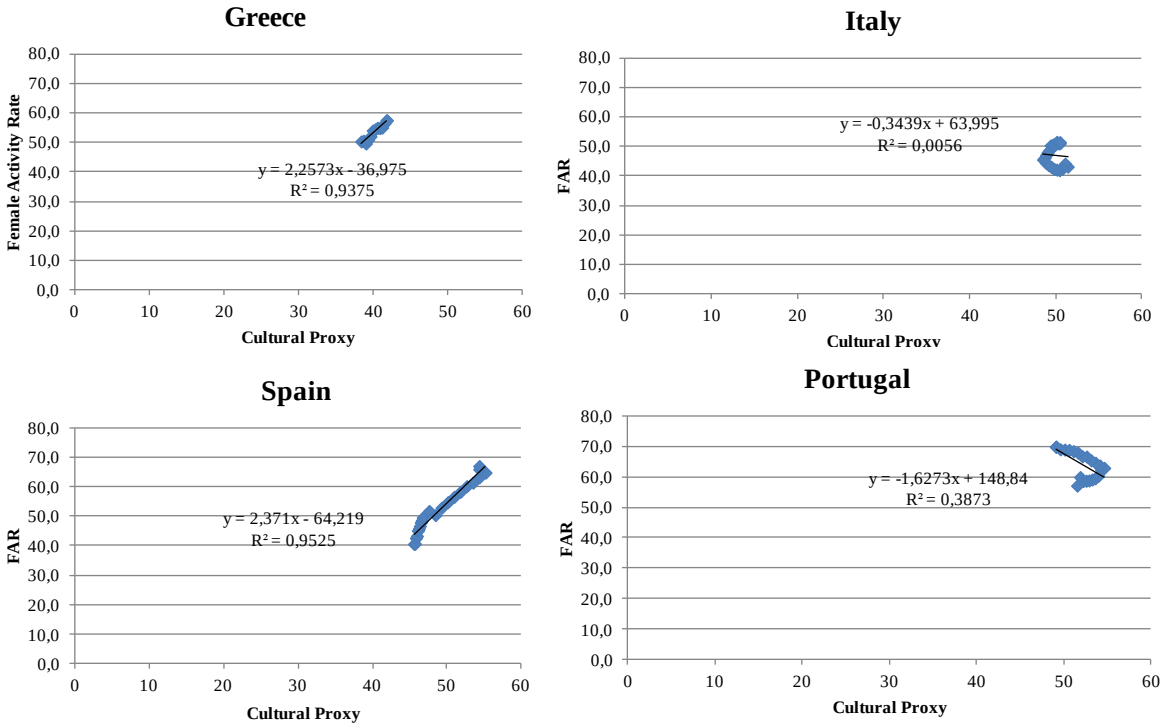
Source: *Own elaboration, Eurostat*

Figure A.9. FAR on expenditure (%GDP) on Family/Child Policies (years 1995-2010).



Source: *Own elaboration, Eurostat*

Figure A.10. FAR on "culture" (years 2000-2010).



Source: *Own elaboration, ESV dataset 2000-2010*