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MEN AND WOMEN DURING THE ECONOMIC CRISIS
EMPLOYMENT TRENDS IN EIGHT EUROPEAN COUNTRIES

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OFCE-PRESAGE

The current economic crisis has deeply affected European labour markets. Employment has dropped more or less in all countries. Female employment was less affected by the recession phase of the crisis than male employment. The second stage, characterised by the implementation of stimulus packages, should have been more favorable to male employment. The third stage, during which austerity plans have been introduced, might be particularly harsh for female employment. These gendered effects of the crisis are basically explained by sectoral segregation based on gender. The aim of this paper is to describe and analyse the trend in employment for women and men during the different stages of current crisis in eight European countries. We break down the evolution of employment by sectors for men and women by using a shift-share analysis. In some countries, specifically in Spain, the impact of the crisis has led to a narrowing of the gender gap; this is mainly explained by gender sectoral segregation. In the UK and Denmark, women have been less protected by sectoral segregation, because they have experienced more job losses than they should have if their distribution across the different economic sectors had remained the same during the crisis.

Keywords: Gender gaps, Economic cycles, Labour markets.

The financial and economic crisis that began in the fall of 2007 has deeply affected European economies. The economic downturn has strongly hit labour markets. Employment has dropped more or less in all countries and unemployment rates

1. Gérard Cornilleau and Marion Cochard contributed to the first stage of this research. I thank them for their support.

have increased dramatically. Three stages of the crisis can be identified: the first phase was the recession itself (i.e., the fall in GDP); the second phase was characterised by a relative recovery (a rebound of GDP), and then the third phase has been marked by "austerity", public policies aimed at fiscal consolidation. Overall, the current crisis has had a gendered impact on labour markets during the three stages. In the first one, female employment was in general less affected by the recession than male employment. During the recovery phase, male employment recovered faster than female employment. The last stage is expected to impact female employment more intensively because it has generally been affecting more the sectors in which women are over-represented (social service activities, health and education, etc.). Indeed, European labour markets are still characterised by a high level of gender sectoral segregation. The gendered effect of the crisis is basically explained by this phenomenon, since the crisis has a clear sectoral dimension and the public policies implemented to tackle it are also sectorally-oriented.

The aim of this paper is to analyse the forces that drive the gendered impact of the crisis on the labour market in different European countries, in terms of employment trends for women and men. I apply some of the methodologies developed in Rubery (1988) to the crisis, using online Eurostat data, and I analyse the gender consequences of the economic crisis and of the public policies implemented during this period. Eight European countries have been chosen: Denmark, France, Germany, Greece, Italy, Spain, Sweden, and the UK. The crisis has not hit these countries with the same magnitude. Also, the reactions of labour markets to drops in GDP have been significantly different. This is due to differences in countries' macroeconomic situations, but also in their institutional environments. The measures taken by governments in reaction to the collapse of employment and the scope of fiscal consolidation implemented differ across the countries under review.

The panel of countries chosen gathers different types of welfare states; and the public policies implemented to fight the crisis are partly designed according to their type of the welfare state, using Esping-Andersen's classification (1990). The countries under review also represent different types of gender regimes (Lewis, 1992); this must be taken into account, since the present paper

focuses on the gender impact of the crisis. Esping-Andersen's social democratic welfare state is represented by Sweden. Denmark is an emblematic case of the flexicurity model (Gazier, 2008). The liberal model is represented by the UK. Germany and France are used to being presented as Continental models, even if France is different from Germany in terms of gender norms. Spain, Italy and Greece are known as Mediterranean welfare states. Spain is a specific case as female participation skyrocketed during the last two decades: the labour force participation rate of women between 15 and 64 years old grew from 42.6% in 1992 to 67.9% in 2012 (Eurostat). Spain is no longer a "Mediterranean welfare State" strictly speaking, as usually suggested in institutional classifications of welfare states, as it is no longer based on the low participation of women in the labour market. But, the gender division of labour inside the family is still marked, and public policies affecting the work-life balance are still underdeveloped in promoting gender equality (Gonzales Gaco *et al.*, 2014). Greece has faced one of the deepest crises in Europe. The intense public debt crisis, with which Greece has had to cope, has led the Troika (the European Commission, the European Central Bank and the IMF) to require the most important fiscal consolidation ever implemented in Europe.

In the first section, I assess the effect of the economic downturn and its impact on employment from a gender perspective. The section also analyses the evolution of the labour force during the crisis, in distinguishing between demographic trends and participation phenomena in the labour market. The sectoral characteristics of the crisis have often been given as the explanation for its gender impact. Section 2 investigates this point by using shift-share analysis. The decomposition of the evolution of employment by gender makes it possible to distinguish between the share that is due to the sectoral effect of the crisis and the share that is due to a modification of the proportion of women in each sector. I do not take into account the trends in job quality, or the evolution of working time during the recession. The statistical analysis is based on trends in employment in volume terms and labour force participation. The sectoral data given by Eurostat does not allow both a sectoral analysis and a working time analysis, which together would have made it possible to calculate full time equivalent employment.

1. General trends in labour markets

1.1. Contrasted patterns in employment

1.1.1. The three stages of the crisis

The current economic crisis is identified as being different to others over the last three decades, in several ways: the severity of the crisis, the interventions of national governments in implementing stimulus packages, the subsequent European sovereign debt crisis and the ensuring fiscal consolidation to contain public deficits. In the literature on the gendered impact of economic recessions, the current crisis is also viewed as being specific because women seem to have been particularly protected from jobs destructions. As suggested by Smith and Villa (2013), the analysis of the impact of recession on the female labour force must be related to long term trends, such as gender regimes, family models and institutional environments, all of which have changed over time. Since, the European Employment strategy launched in 1997, female labour force participation has risen, so that women are no longer a secondary earner in families. Spain has experienced a particularly dramatic increase in female participation in the labour market, over the last decade. This trend has destabilized the male breadwinner model, but Spanish women are still more affected than men by short term contracts, unemployment, and part-time jobs (Gonzales *et al.*, 2014). The increase in the female participation rate has been coupled by an increase in gender sectoral segregation.

This context also explains why the current crisis is different from the past ones, from a gender perspective.

In fact, the present economic crisis can be broken down into three stages (Figure 1), and the timing of each stage is not the same according to countries under review:

— The collapse stage: this was the recession itself, characterised by a fall in GDP for at least two consecutive quarters. The depth of the recession differs across countries. The economic and financial crisis began in the 4th quarter of 2007 (Q4 2007) in Sweden, and during 2008 in the other European countries under review. Everywhere, this was the most severe recession of the post-war period: between the second quarter of 2008 and second quarter of

2009, economic activity fell by 8% in Denmark, 6.2% in Germany, 6.6% in Italy, 6.1% in Sweden, 6.3% in the UK, 4.5% in Spain, 3.7% in France, and by 2.7% in Greece (Eurostat).[2]

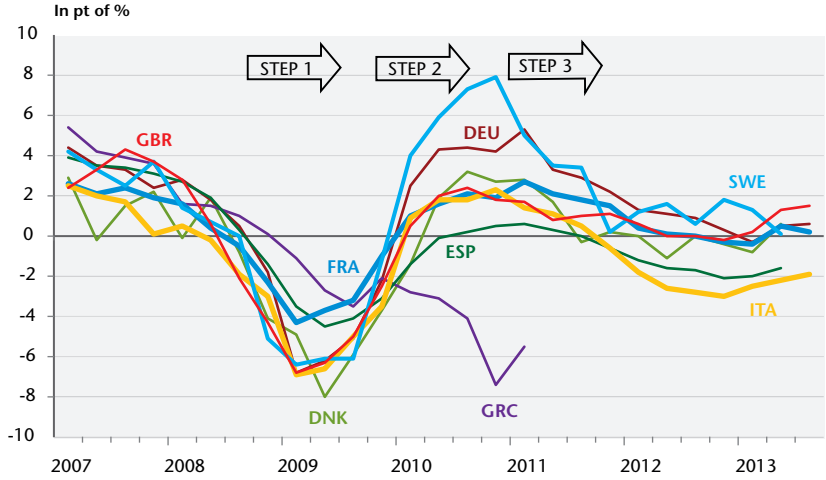
— The rebound stage: this second phase was characterised by a relative recovery of GDP (with the noticeable exception of Greece). The countries under review went through this stage with varying magnitude and timing. This rebound was concentrated especially in the sectors in which destructions of jobs had been large. This recovery of activity was reinforced in some countries by stimulus packages (particularly important in the UK and Spain), implemented to boost economic activity in industrial sectors (notably the car and construction industries. This recovery of GDP did not mean the end of the crisis, as the output gap was still existent in the countries under review: at the end of 2010, only Sweden and Germany had reached their pre-crisis level of production. Today (April 2014), output gaps are at historically high levels, and the economic forecasts by the OECD do not show any improvement for the next two years. All countries under review are functioning below their potential economic growth, with the exception of Germany (Figures 2).

— The austerity stage: this last phase has been characterised by fiscal consolidation and cuts in public spending, both of which harm economic growth (iAGS, 2013). Restrictive policies aim to make up public deficits and to fight the crisis of public debt in Europe. This stage is expected to be less favourable to women because austerity plans will induce cuts in public spending.

As a result of the economic downturn, labour markets have been affected sharply since the first quarter of 2008: the timing and magnitude of employment adjustment vary across the countries under review. The differences are explained by the different degrees and forms of flexibility of labour markets in Europe, which are linked to public policies that have been implemented in order to tackle the increase in unemployment. Some countries have relied on internal flexibility (through the reduction of working time, or short-time working schemes), others have used the external flexibility (such as lay-offs, job destructions, etc.).

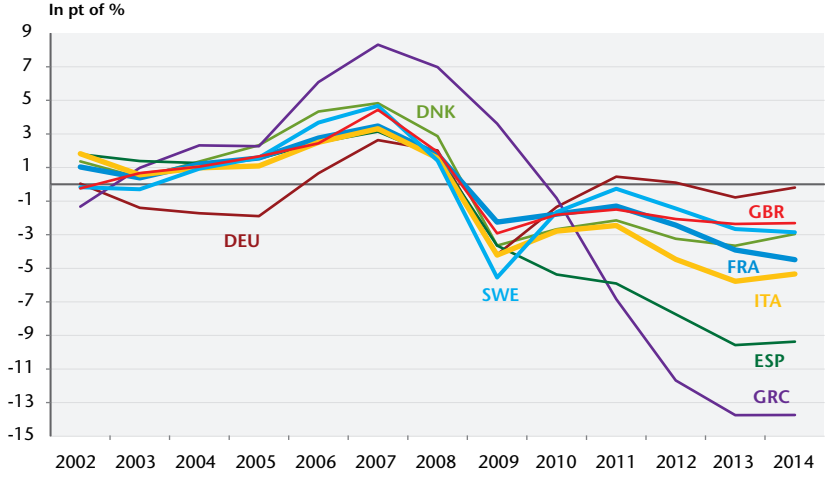
2. GDP and main components - volumes [namq_gdp_k]

Figure 1. Trends in GDP in 8 European countries (percentage point change compared to corresponding period of the previous year)



Gross domestic product at market prices.Seasonally adjusted and adjusted data by working days.
Source: Eurostat, [namq_gdp_k].

Figure 2. Output gap of the total economy by country



Source: Economic Outlook - OECD Annual Projections, 2013.

1.1.2. The reactions of employment to the different stages of the crisis

As shown in Cochard, Cornilleau and Heyer (2010), the average adjustment delay of employment, which measures the reactivity of labour markets to the demand, ranges from around one quarter for Spain, three quarters for France and UK, to five quarters for Germany

and six quarters for Italy. The authors did not study Sweden and Denmark, but according to the following figures, the delay of the adjustment seems to be close to the other countries. Spain has experienced the most important employment collapse, deeper than expected, meaning that the Spanish labour market has likely over-reacted to the economic downturn. The Spanish elasticity of employment to GDP is high; indeed four times higher in Spain than the EU Average (Munoz de Bustillo Llorente and Perez, 2011). In fact among countries under review here, Spain had experienced a specific change in its labour market from the mid-1990s to the beginning of the crisis, when the labour market expanded. The previous high level of employment creation was partly fuelled by the female labour participation, whose rate rose from 37% in 1996 to 66% in 2009, and also by the increase in immigration: the proportion of immigrants in the total population grew from less than 2% in the middle of the 1990s to more than 12% in 2009.

The second stage of the crisis cannot be identified in Greece: GDP and employment for both men and women continued to fall sharply from the beginning of 2009 onwards. Some stabilisation did subsequently occur, but employment still is decreasing (as of early 2014), as is GDP.

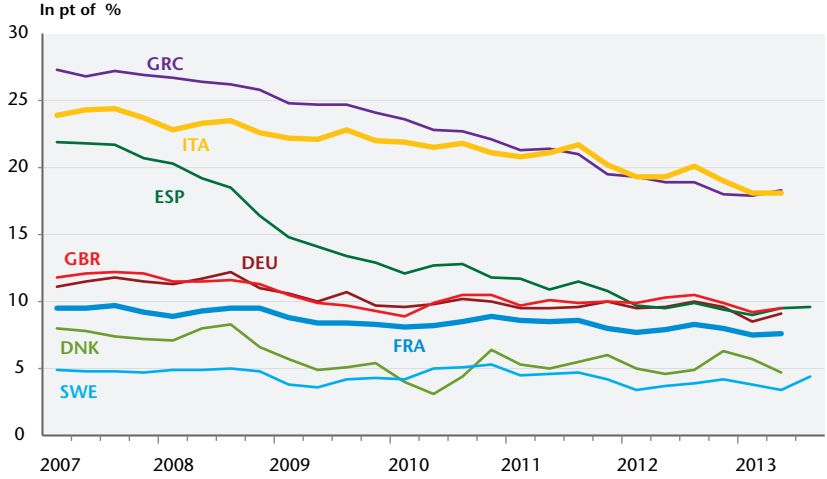
In Germany and to a lesser extent in France, the employment adjustment has been weaker than expected. Spain seems to have completed its reaction to the recession. In other countries, the fall in employment is far below the theoretical impact of the crisis, that is to say when the level of productivity and the evolution of labour force are taken into account. In the UK, employment losses associated with the drop in GDP have been quite small, compared to the recession of the early 1990s (Grimshaw and Rafferty, 2011; Cochard, Cornilleau and Heyer, 2010).

These different reactions of employment to the crisis can be partly explained by the differences in public policies that have been implemented to fight unemployment (Cochard *et al.* 2010). Job losses have been particularly limited in Germany, thanks to a sharp decline in working hours: arrangements for reducing working time and the use of internal flexibility were negotiated in the early 2000. In Italy, the adjustment was a result of a combination of a decline in working hours and a compression of wage costs. In the other countries, the adjustment of the labour market has basically taken place through job destructions, and internal flexibility has been little used as a response to containing unemployment growth.

Leschke and Jepsen (2011) propose a statistical analysis of the crisis from a gender perspective. They concentrate their research on three countries Denmark, Germany and the United Kingdom. Their results show that despite the fact that men were in general more affected by the shocks, women have been less sheltered than in the past crises. Their analysis of the stimulus packages and of the responses to the crisis indicates that in the UK and in Germany, women are less likely to have access to unemployment insurance. They conclude that in long term, the austerity measures have usually targeted the social services sector and education, as well as cut-backs in social security system. All of these are likely to have negative consequences on the economic position of women relative to men.

During the first stage of the crisis, the gender employment gap decreased, even if significant gender differences still remained. In all countries, the lower participation of women induced lower employment rates for women than for men (ranging from 5 percentage points lower in Sweden to nearly 25 points in Italy). The Lisbon Strategy thus set a target of 60% female participation by 2010. During the crisis, the observed reductions of the gender employment gap did not occur due to a higher employment rate of women, but mainly through the decline of the male employment rates.

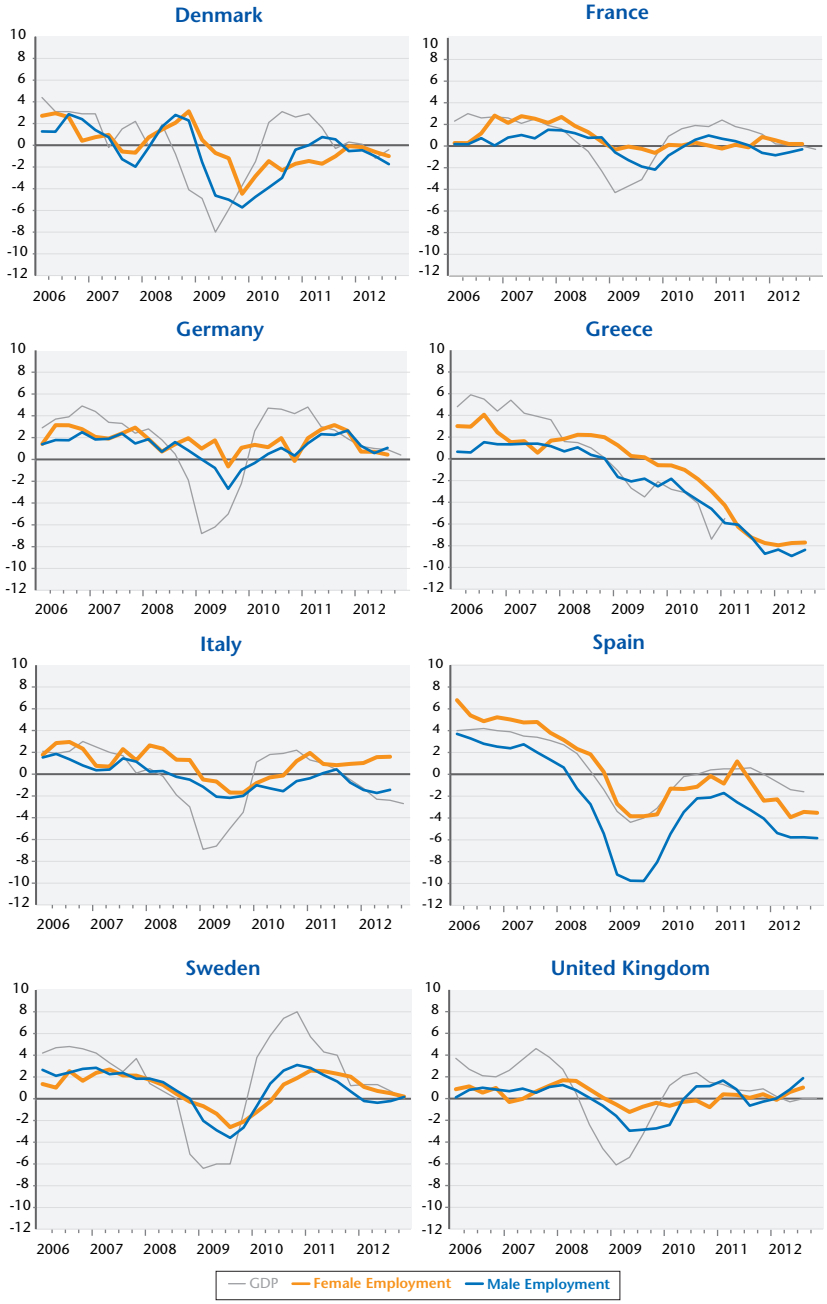
Figure 3. Evolution of the gender gap in employment rates



Source: Author's calculations using Eurostat, [lfsq_ergan].

Figures 4. to 11. Evolution of GDP and employment by sex 15-64 years old

In %



GDP and employment: percentage change compared to corresponding period of the previous year.
Gross domestic product at market prices: seasonally adjusted and adjusted data by working days.
Source: Eurostat.

The following figures (4 to 11) show the quarterly evolution of employment by sex, for workers aged 15 to 64 years old, for men and women during the crisis, and for GDP trend.

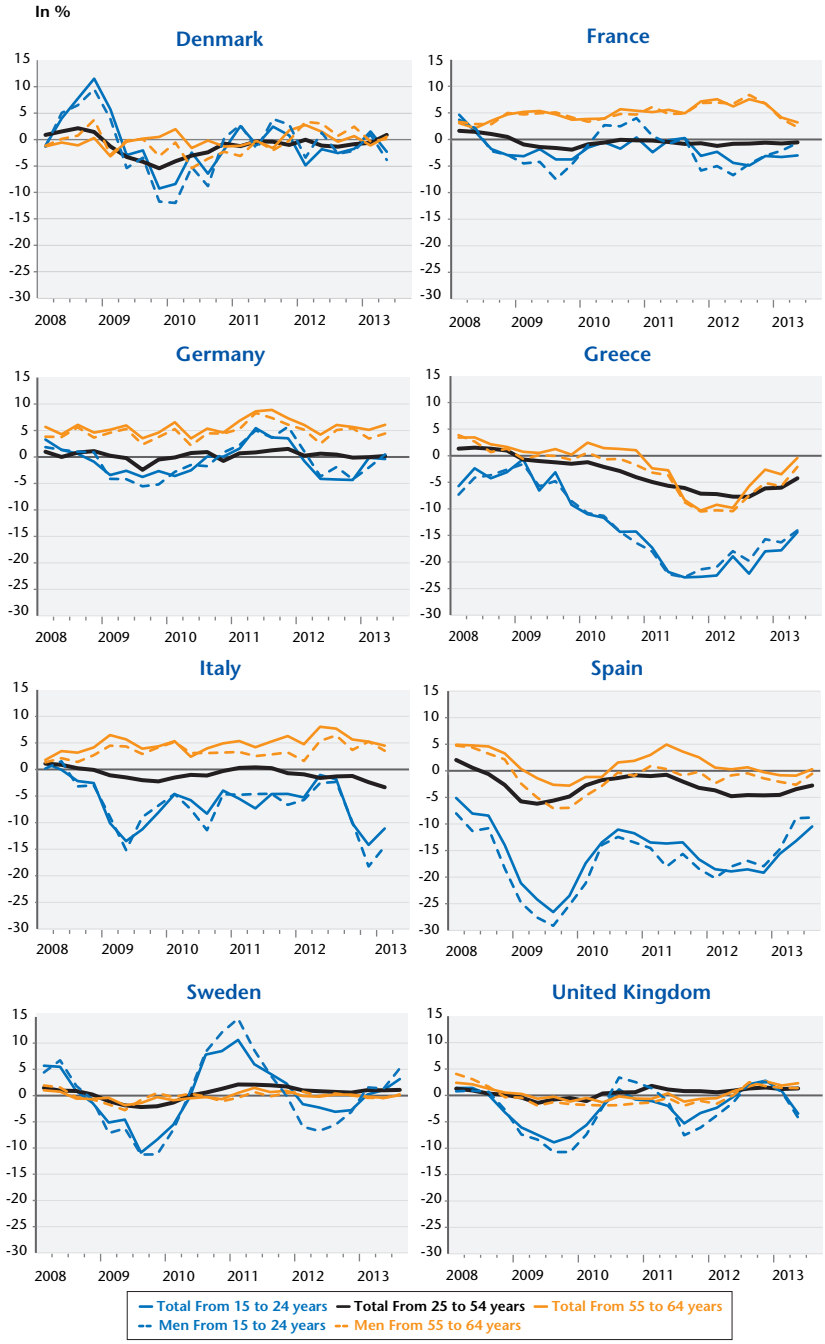
In most countries, it is possible to observe the following pattern (with more less magnitude and time lags depending on the evolution of GDP): during the collapse stage, the gender gap in terms of employment narrowed; or the second phase, the opposite is to be observed; while the third stage has been characterised by a drop either in the level of employment, or in the growth rate of employment for both women and men. In countries where employment has "under-reacted" to the economic downturn – Germany and France – the advantage of women relative to men in terms of the employment trends is smaller.

Three countries do not fit this pattern: Italy, Greece and Spain. In these countries, the trend in women's employment has been more favourable than for men, during the whole period. In Spain, the gender gap has been particularly large, whereas it has been small in Italy. This tendency in southern European countries might be explained by the long term dynamics of women's participation to labour market as a catch-up phenomenon. This is particularly true in Spain. Spanish male workers experienced a dramatic drop in employment: an over-reaction of employment to falling GDP, concentrated on men. The gender gap is larger in countries were employment has over-reacted. In Greece, no recovery stage is yet to be seen, and employment for men and women has kept decreasing, though more rapidly for men than for women.

1.1.3. The vulnerability of young and unskilled workers

In this section, I analyse the difference across countries of employment trends for youth and unskilled workers with a gender outlook. Young and uneducated workers are more likely to be hit by lays off, job destructions, etc. In general, youth employment is more sensitive to the business cycle than jobs among the older population (OECD, 2008). During severe recession, young people, as new entrants on the labour market, face huge difficulties in acquiring a job, particularly as a consequence of hiring freezes. They also struggle to keep their jobs, since they are more likely to be laid off than senior workers, because it is often cheaper for employers to fire young workers than older ones.

Figures 12 à 19. Evolution of employment by age



Percentage change compared to corresponding period of the previous year.
Source: Eurostat, [lfsq_egan].

Young people are further more likely to have a temporary job or a short term contract, which are not renewed during recession. Veric (2009) has shown that the young men working in construction were the most affected by the crisis and unemployment in most countries. We find the same trend in the present paper: in all countries under review, young workers have been the most affected by the collapse stage of the crisis, as regards employment trends. Meanwhile, older workers seem to have been protected during the recession.

In Germany, France and Italy, employment of older workers has kept increasing during the whole period. In Sweden and the UK, the employment of older workers has been quite stable during the period under review. There is no or little gender gap, the trend is slightly more favourable for women than for men in Italy and Germany, and in the UK. In Denmark and Spain, the evolution of employment for 55 to 64 year-old workers has been more sensitive to the business cycle, and men have been more affected than women. These trends have been stronger in Spain than in Denmark: older Spanish female workers have seen their employment grow during the period under review, even if the pace of increase was reduced during the collapse and austerity stages. Greece is the only country where, from the first quarter of 2011 – that is to say the third, austerity stage of the crisis – older workers have started to experience a collapse in employment.

In all countries under review, young workers have been hit more by the contraction of employment than the other categories of workers. In Germany and Italy, no or only a small gender gap is to be observed for unskilled workers. In Italy, youth employment has hardly recovered for both sexes. In Germany, the evolution of youth employment has been smoother than in other countries (with a fall of around 5% during the first stage of the crisis). In the UK, France, Sweden, and to a lesser extent in Denmark, the gender gap has followed the business cycle: young men experienced a more important drop in employment than their female counterparts during the first stage of the crisis. But they also benefited from a larger improvement during the second stage. During the third stage, the gender gap reversed and young French women have experienced more loss of employment than young men. In France, the gender gap in employment trends is clearly concen-

trated on young workers. In Denmark, employment of 15-24 years old workers dropped from the last quarter of 2008 to the first quarter of 2010, after which it has recovered slowly. During 2009, some specific measures have been implemented in order to tackle unemployment of young persons, who were particularly affected by the economic downturn, including: subsidised employment, apprenticeships or training. These may have helped improve the trend in youth employment (Jorgensen, 2011). In these countries, the gender gap has the same pattern for unskilled workers.

In Spain, and even more so in Greece, youth employment has kept decreasing. In Spain, the unemployment of young workers has reached 50%, and young men are specifically affected: during the previous economic boom, opportunities in the construction sector might have encouraged young men to drop out of education, so that they became more vulnerable to the crisis than young women (Gonzales Cago *et al.*, 2014). The gender gap has been large and always in favour of women, during the three stages of the crisis. The same trend is observed for unskilled workers. Nevertheless, young and unskilled female workers have experienced a drop in employment but to a lesser extent than men. In Greece, they have been affected with more or less the same magnitude, in all age brackets. The effect of the crisis on men and women is different according to their level of education: among the less educated workers, men have been more hit than women, whereas among the more educated workers, women have been especially affected by the collapse of employment (Karamessini, 2014).

In most countries under review, older workers (aged between 55 and 64 years old) have seen their employment increase. Workers under 24 years old have been the most affected by employment losses during the recession: mainly young men (Veric, 2009). In contrast, the employment rate of older workers has been maintained for women as for men. During the previous economic crisis, the shock to employment was absorbed by young and also senior workers (through early retirement, invalidity schemes and specific treatment of seniors' unemployment). The decrease in seniors' employment has made it possible to contain, at least in the short term, the decrease in employment of young workers. But the current crisis is characterised by the fact that seniors' employment has held up (as shown is the figures 12 to 19), in all countries

under review. For a decade, the European Union has promoted seniors' participation in the labour market ("active ageing"), and most of the schemes encouraging senior workers to withdraw from the labour market have been suppressed. The lack of substitution possibilities in employment between young and old workers might have played a role, at least in the short term, in the very sharp fall of youth employment (Lerais and Math, 2011). Then, the adjustments of labour markets to the economic downturn have mainly occurred in the category of young workers.

1.2. Decomposition of participation trends

1.2.1. A shift-share analysis

During the crisis, especially during the stage of collapse, it was possible to observe a discouraged-worker effect, leading to a decrease in the labour force. This change in trend has been due to the withdrawal of workers from the labour market because of the massive increase in unemployment. The change of behaviour can be different for men and women. As the male labour force has experienced a larger destruction of jobs than the female one, the negative participation effect may be more important for men than women. In addition to the discouraged-worker effect, other gendered types of behaviour may arise: the labour supply may still be driven by the some intra-household decisions, leading for instance an inactive wife to participate in the labour market (or to increase her working time), in response to the loss of her husband's job (the added-worker effect).

In using the Labour force surveys, this research analyses the evolution of the labour force during the crisis, by distinguishing two different effects:

— A demographic effect: the whole population may increase or decrease according to general demographic trends: migration movements (emigration or immigration) or demographic behaviours (like the fertility rate changes).

— A participation effect: this second effect is related to labour supply. For instance, young people may postpone their entrance into the labour market by lengthening their education, or married women can increase or decrease their labour force participation, as the labour of married women is more elastic than for others

workers. Some workers might decide to withdraw from the labour market because of the increase in unemployment. During the current crisis, given to the increase of unemployment for some categories of workers (young Spanish men for example) it is highly likely that this discouraged-worker effect has led people to exit the labour market. It thus implies a decrease in the labour force.

In order to measure the magnitude of these two different effects on the labour force participation, a shift-share analysis has been applied to the evolution of the labour force during the crisis, for different brackets of population age. I conducted this analysis for men and women separately.

L_{qt} is the labour force in the quarter q of the year t,

P_{iqt} is the population of age i (the population is regrouped according to brackets of ages every 5 years, from 15 years old to 64 years old) in quarter q (1 to 4) of year t,

α_{iqt} is the participation rate of the population of age i in quarter q of year t

$$L_{qt} = \Sigma_i \, \alpha_{iqt} \, P_{iqt}$$

Then:

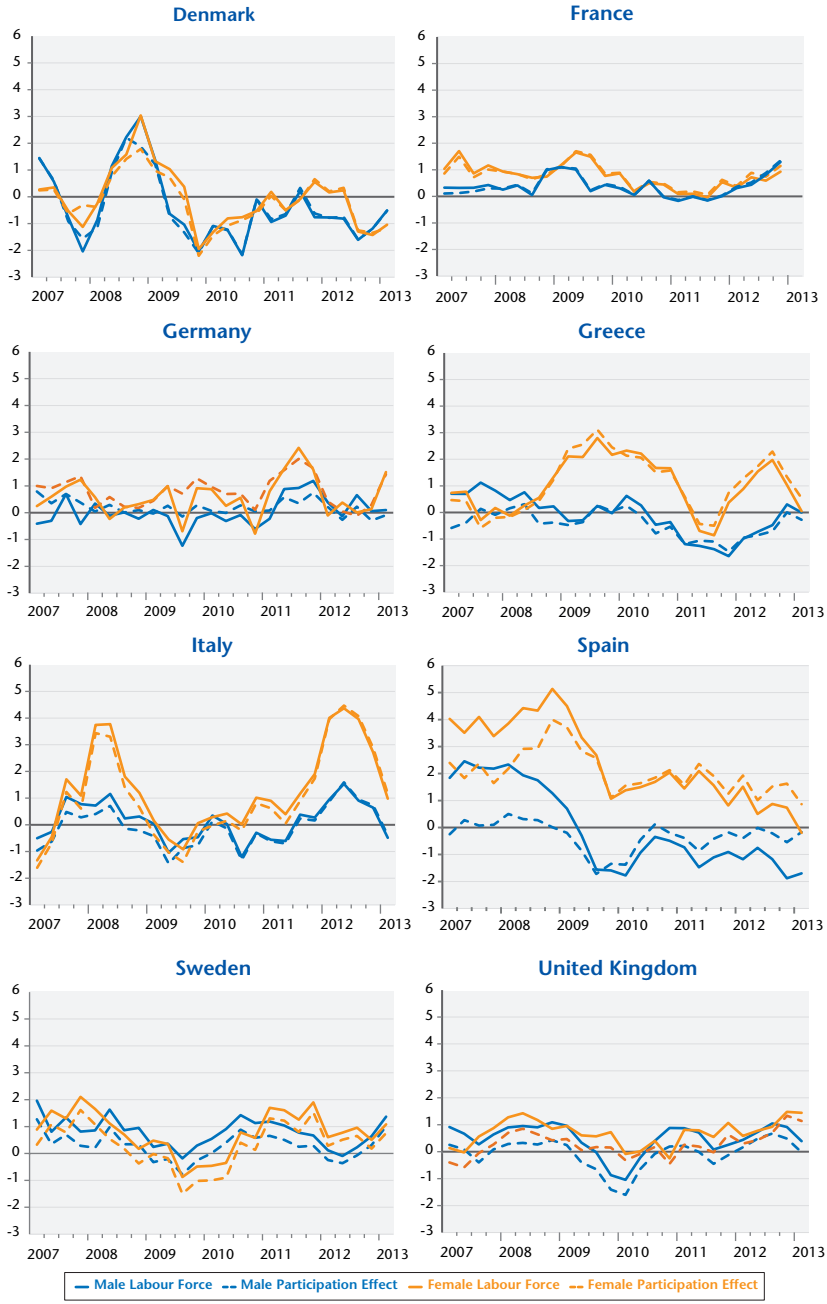
$$\Delta L = L_{qt} - L_{qt-1} = [\Sigma_i \, \alpha_{iqt-1} \, (P_{iqt} - P_{iqt-1})] + [\Sigma_i \, P_{iqt-1} \, (\alpha_{iqt} - \alpha_{iqt-1})] + [\Sigma_i \, (P_{iqt} - P_{iqt-1}) \, (\alpha_{iqt} - \alpha_{iqt-1})]$$

[demographic effect] + [participation effect] + [interaction effect]

The effects are presented in percentages of the active population of the quarter of the previous year. They are calculated for men and women from the first quarter 2007 (Q1 2007) to the first quarter of 2013 (Q1 2013). For each country, the following graphs show the evolution of the labour force and the evolution of the participation effect for both sexes: the participation effect gives the change in labour force participation that would have been observed if the total population had not changed. The demographic effect is the difference between both curves. The demographic effect is interpreted as the change in labour force participation that would have been observed if the participation rate had remained the same during the period.

Figures 20 at 27. Decomposition of the evolution of the labour force

In %



Percentage change compared to corresponding period of the previous year.
Source: Author's calculations using Eurostat, [lfsq_egan2].

1.2.2. Demographic versus participation effects

In France, Italy, Denmark and Greece, demographic changes have played a small role in the evolution of the labour force: thus, the evolution of the labour force is mainly explained by the evolution of the behaviour of participation in the labour market.

In Spain, up to Q3 2009, the demographic effect was positive for both men and women. This effect enhanced the labour force, meaning that the growth of the population induced an increase in the labour force. This positive demographic effect is explained by the immigration flow of workers to Spain during 2000s: between 2000 and 2008, immigration in Spain rose from 4% to 13% of the population. During the expansionnary period from 2001 to 2007, the immigration flow had no impact on native employment level, but induced a reallocation of occupations for the native workers from manual-content occupations to more interactive occupations (De la Rica and Polonyankina, 2014). But when the economic outlook worsened, the demographic effect became negative for both sexes, but this negative demographic trend was concentrated among men under 35 years old. This might be due to an emigration of male Spanish workers to foreign countries, where the labour market is more dynamic and/or to the fact that some male immigrants that came to Spain during the economic boom subsequently returned to their home countries. These trends have been much lower for Spanish women.

In the UK and in Sweden, the demographic effect has been positive, meaning that the dynamism of the population reinforced the labour force during the period studied.

In Germany, the demographic effect has been slightly negative (as the curve of the participation effect is above that of the labour force), during almost the whole period. This might due to the low fertility rate that Germany has experienced for many decades; this long run trend is a factor that affects the labor force (Cornilleau, 2012).

In Germany and in France, there has been no discouraged-worker effect: the contraction of employment has not lead to a lesser participation in the labour market of neither women nor men: even if in 2011 there was a slight decrease in male labour force. In Spain and in the UK, the discouraged-worker effect

concerns only male workers. This is consistent with the fact that most job destructions have concerned male workers. In the UK, the positive demographic effect has partially compensated this negative participation effect for men. In contrast, in Spain, the negative demographic effect has reinforced the negative participation effect observed for men, so that the male labor force has decreased.

In Sweden and Denmark, the discouraged-worker effect was larger for women than for men. This means that during the recession phase, women withdrew from the labour market to a greater extent than men. In Sweden, the positive demographic effect has compensated the negative male participation effect, so that the male labour force has remained stable. For Swedish women, the positive demographic effect was not large enough to balance the discouraged-worker effect, so that the female labour force decreased from the Q3 2008 to the Q2 2009.

In Spain, in Greece (with the exception of the middle of 2011) and in Italy, the female labour force participation increased during the period studied. This increase in female participation in the labour market might be explained by an added-worker effect: as when men lose their jobs, their partners have a strong incentive to participate in the labour market. Such behaviour may occur in an intensive way (female workers living in couples might try to work longer hours in order to compensate the loss of income due to their partner's unemployment), or/and in an extensive way (inactive women might decide to participate in the labour market because their partner has lost his job). In countries where long term female participation is low (as in Italy or in Greece), this effect may be large.

In Spain, highly educated workers have kept participating in the labour market: education has protected them from the recession, as this trend concerns both men and women. Concerning less-educated workers, as men have withdrawn from labour market, women have increased their participation. This might reflect a household's compensating strategy. The negative impact of children on the participation of less-educated mothers has decreased during the crisis (Gonzales Cago *et al.*, 2014).

In Italy, another effect might explain the increase in female participation in the labour market: the dramatic increase of employment in the sector of "household care activities as employers", which has almost doubled during the period (from 360,000 jobs in Q1 2008 to 723,000 in Q1 2013, of which around 90% are female workers). The progressive implementation of the laws voted in 2008 on the regularisation of illegal workers, specifically in the care sector (workers who care for elderly and invalid persons, cleaners, or COLF: *collaboratore famigliare e badanti*), explains this evolution which has benefited mainly women in absolute terms, as their share in this sector has remained stable.[3] This evolution does not represent an increase either in employment nor in female participation *per se*, but a regularisation of illegal jobs which existed before. The regularisation of female workers has increased "artificially" the participation of Italian women in the labour market.

The main conclusion of this first section is the gendered impact of crisis, with more or less magnitude according to countries, but in all of them, women have been less affected by the collapse of labour market. Female employment seems to be less sensitive to economic downturns but structurally marked by under-employment: part-time jobs and under-employment concern mainly female workers in all countries. I do not integrate working time in the analysis, so I cannot illustrate this specific point in this paper. The literature on the quality of jobs during the crisis shows that some socio-economic groups that are more affected by decreasing trends in job quality. According to Erhel *et al.* (2012), young and older workers and less-educated workers were particularly concerned by a degradation of job quality between 2007 and 2009. They also show that women seem less affected than men by these negative trends, other things being equal.

3. http://www.parlamento.it/parlam/leggi/decreti/08185d.htm
http://www.parlamento.it/parlam/leggi/09102l.htm

2. Gendered analysis of employment during the crisis

2.1. Why a gendered impact of the crisis?

2.1.1. Different hypotheses

The previous section has shed light on the gendered impact of the crisis on employment. This effect changed during the different stages of the crisis, and it magnitude differs from country to country. The present section aims to explain this phenomenon, that is to say the fact that, during the different phases of the crisis (recession, rebound and austerity), female and male employment trends were affected differently at the same time and/or magnitude. As Rubery has shown (1988), there are three main hypotheses that can theoretically explain the fact that employment of men and women is not affected in the same way by recessions, and also by economic booms.

The first hypothesis is the *substitution hypothesis*. During economic recession, employers want to minimize their production costs and in the sense that they are looking for a cheaper labour force. As women are paid less than men, they might substitute male workers for female ones. In this analysis, female employment evolves counter-cyclically. This hypothesis relies on the fact that female employment is seen as secondary, and the historical facts denied this vision of women as substitute workers. The substitution effect might occur at the micro level: in the couple, if the man has lost his job, the woman might be encouraged to work to compensate the loss of income due to her unemployment partner. This hypothesis implies that female employment is counter-cyclical. Testing these added worker effects at the micro level requires microdata.

The second hypothesis is the *buffer hypothesis*; it may be linked to the theory of internal labour markets (Doeringer and Piore, 1971). Some workers are trapped in a second labour market, with low quality jobs, low social and labour protections, and weak bargaining power. This second labour market is characterised by high flexibility, and a high degree of competition between workers. These workers are in the front line of unemployment during an economic downturn. Women, but also youths and migrants, are over represented in the secondary labour market

(Piore, 1978), and this would explain a gendered effect of the crisis. A *gendered buffer effect* can be the result of the concentration of women is specific sectors: with lower pay than in male sectors. As women are over-concentrated in a reduced part of the labour market, their wages are lowered by this highly competitive environment. Their bargaining power is lower than male workers. This could explain a gendered vision of the dual labour market. Another gender interpretation of this buffer hypothesis is that women are more sensitive to the discouraged effect because of the lesser importance that has been historically attributed to their employment, and the social norms supported by the male breadwinner model. The female labour force would therefore constitute a flexible reserve that can be expelled from labour market during recessions and be encouraged to participate during economic upturns. Under the buffer hypothesis, female employment should be pro-cyclical. The evolution of female employment during the current economic crisis shows the opposite pattern, in countries under review (with the exception of Greece).

The third hypothesis is the *sex segregation hypothesis*. As labour markets are characterised by a rigid sex-typing of occupations and sectoral segregation, according to the sectoral nature of the crisis, women can be more or less hit by the recession than men. For instance if the decrease in economic activity is concentrated in female-dominated sectors, then demand of employment in these sectors tumbles, and female employment is more affected by the recession. According to the nature of the crisis (the types of sectors which are the more hit by the collapse of economic activity), the trend in female employment might be pro- or counter-cyclical.

These three hypothesis can be simultaneously valid and can help to understand the gendered impact of the crisis in sub-sectors of the economy (Humphries, 1988), or in a specific part of labour market (unskilled workers for instance). In the first section of this paper, it has been shown that during the collapse stage of the crisis, in general, female employment was less affected than male employment. This "counter-cyclical" effect on female employment excludes the buffer effect as the main explanation of the gendered impact of the economic crisis. The labour force participation analysis in the previous section did not exhibit a specific withdrawal of women from the labour market, the opposite is mainly to be

observed, as some countries experienced a male discouraged-worker effect but no female one. In some countries (Italy and Greece), the participation of women in the labour market has increased during the crisis. The added worker effect might play a role in these countries, where female participation was low before the crisis. The observed gendered effect of the crisis might be due to the specific effects of different stages of the crisis, or due to a business cycle that does not affect the employment of men and women with the same timing: a delay in employment adjustment (due to the specific characteristics of female employment relative to male employment) might induce the gender gap. The sex segregation of labour markets combined with a sectoral recession is the more widespread explanation to the gendered impact of the crisis. The following section focuses on this factor, using a statistical analysis to investigate to what extent the sex sectoral segregation explains the gendered dimension of the crisis.

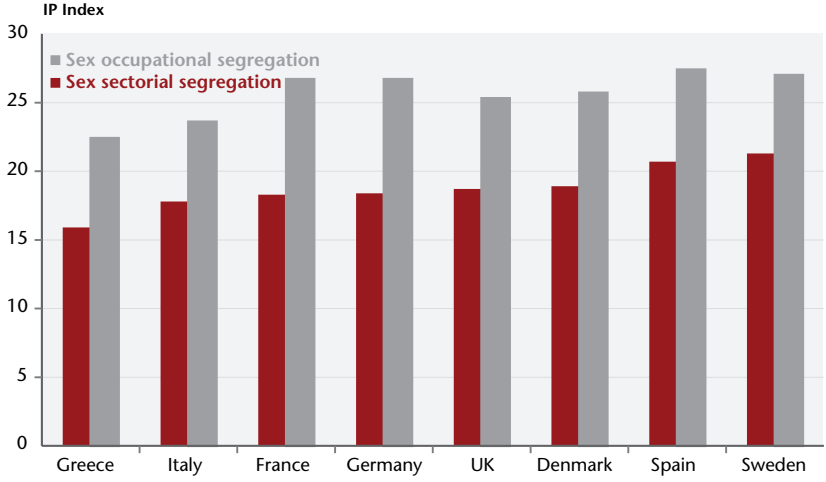
2.1.2. Segregated labour markets and sectoral recession

Sex segregation is a common feature of European labour markets. Two types of segregation might explain the gendered impact of the crisis on employment. Sex sectoral segregation implies that women are overrepresented in specific sectors (education, social services, etc.) of the economy and under-represented in others (manufacturing, construction, etc.). If the recession has a sectoral dimension, then its effects on female and male employment will differ. Sex occupational segregation implies that women are over-represented in specific occupations (child-minders, cleaners, etc.) and under-represented in others (electricians, enginemen, etc.). This phenomenon is linked to the previous one, but it is not the same.

In all countries under review, we can observe both the sectoral and occupational segregation of employment. Women and men are concentrated in specific sectors. Women represent around 80% of the workers in the health and social services sector, compared to only 10% or less in the construction sector. The commodification of some family tasks was a factor that favoured female participation to the labour market, but it has also helped to reproduce the work they were doing before in the private sphere. Among the female-dominated occupations, one finds “shop sales persons and

demonstrators" or "domestic and related helpers, cleaners and launderers" or "other office clerks". In contrast, among the male-dominated occupations, one finds "motor vehicle drivers", or "building frame and related workers", "machinery mechanics and fitters" (Bettio and Verashchagina, 2009). Using the standardised or Karmel and MacLachlan indicator (IP), the following figure shows the sex sectoral and occupational segregation index in each country under review before the crisis (in 2007). [4]

Figure 28. Sex sectoral and occupational segregation IP index, 2007



LFS, sex occupational segregation (ISCO three -digit), sex sectoral segregation (NACE two-digit).
Source: Bettio and Verashchagina, 2009.

The 2008-2009 recession had a clear sectoral dimension. As shown in Table 1, sectors where men are over-represented have been hit more than those where women are over-represented, in terms of job destruction. The sex sectoral segregation might have acted as a protection for women to the recession. In sectors affected by the recession, some specific occupations might be in the first line of downsizing when a collapse in economic activities occurs. These are sectors where women are over-represented – basically "education" and "human health and social services" –

4. Let F be total female employment, T total employment, while the index i represents the sector i, then:
$I_{km} = (F/N)*\Sigma_i \left| T_i/T - F_i/F \right|$ where N is number of workers (male and female) and F are female workers, while i represents the sector i.

have been spared by the collapse in economic activity, whereas sectors where men are over-represented, like construction and manufacturing have been deeply affected by the crisis. Besides, sectors like construction are more likely to hire temporary jobs, which constitute a strong and quick means to adjust employment to the business cycle. Between Q1 2008 and Q1 2010 in Spain, the manufacturing and construction sectors, in which women represent respectively less than one third or around one third of the workforce, suffered the destruction of 709,000 and 1 million jobs (respectively). Whereas, in the education sector and the human health and social work activities sector, in which women represent respectively 60% and 82% of the workforce, 54,000 and 133,000 jobs were created during the same period (Table 1). The picture is more or less the same in each country under review. Nevertheless we can observe some specific cases. In France, the education sector has lost 44,000: this is the result of a reduction non-teaching workers in education, implemented during the Sarkozy Presidency, with the rule of not replacing one retiree out of two. We may observe that in Italy the education sector has also lost 129,000 jobs: since 2008, some specific measures have been implemented in Italy, in order reform the educational system and cut public education spending, the "Riforma Gelmini" (2008-2009).[5] As a result, the number of teachers and educational workers diminished during this period. In Sweden, the human health and social work sectors also lost many jobs during the period (37,000, and this represents around 2% of job destruction in all NACE activities). It can be noted that the UK kept creating many public jobs even during the beginning of the crisis, with 324,000 jobs created in the education sector and 248,000 jobs created in the human health and social work activities sector.

During the second stage of the crisis, it is possible observe that the pace of male employment destruction decelerated: in most countries male employment kept decreasing during this stage, but at a lower pace than during the collapse phase, and more rapidly than female employment. Two main factors can explain this gendered characteristic of the rebound phase. The first one is linked to the fact that the business cycle is gendered: male

5. Law 81/2009 ; Law 169/2008

dominated sectors are more exposed to economic downturns and upturns than female dominated sectors. The second factor has to do with the stimulus packages that have been targeted across the industries the most hit by the recession, chiefly the manufacturing sector. The public policies implemented in order to fight the recession of the collapse stage have benefited male workers more than female ones. In Germany, the collapse of employment was contained through internal adjustment: the use of short-time work (see the previous section) has mainly concerned male workers (the share of men in short time work was 78%). In contrast, the majority of part-time workers in Germany are women, but they are not compensated for this type of under-employment (Annesley and Scheel, 2011). The austerity policies that have been implemented in European countries in order to reduce the public debts and public deficits are more likely to affect female employment for the same reason. In most countries the austerity stage has implied cuts in public spending, and reductions of public services.

Female employment and male employment are differently allocated across sectors and occupations. These characteristics explain at least partially the gendered impact of the different stages of the crisis. The variation of employment by gender and industry does not allow identification of the "pure" effect of job segregation in explaining the gendered impact of the crisis. During 2008 and 2013, the share of women in each sector might have changed, this might have hidden specific gendered effects of employment changes during the crisis. It might be due to the sex occupational segregation: for instance, in sectors where women are under-represented, job destructions might have been concentrated on female occupations, and the share of women in these sectors might have fallen as a consequence.

Table. Employment evolution in different sectors during the recession phase between Q1 2008 and Q1 2010

In thousands

	DK	GER	SPAIN	FR	IT	SW	UK	GRE
Total - All NACE activities	**-121,5**	**334,5**	**-2 007,9**	**-223,6**	**-414,4**	**-101,6**	**-769,9**	**-82,9**
Manufacturing	-55,9	-148,7	-709,1	-336,1	-331,5	-82,3	-632	-57,2
% of Women in 2008	*32*	*27*	*26*	*29*	*29*	*24*	*25*	*27*
Construction	-41,4	-20	-1005,9	-33,4	19,9	-7,3	-396,6	-56,5
% of Women in 2008	*9*	*12*	*7*	*10*	*6*	*7*	*13*	*2 2*
Wholesale and retail trade; repair of motor vehicles and motorcycles	-34,3	41,7	-297,7	74,5	-169,5	-11,6	-317,1	-31,8
% of Women in 2008	*45*	*52*	*49*	*47*	*40*	*44*	*50*	*43*
Public administration and defence; compulsory social security	-6,3	81,6	159,2	-117	-42,9	14,9	-140,3	-2,9
% of Women in 2008	*53*	*46*	*41*	*52*	*34*	*54*	*49*	*36*
Education	20,8	95,5	53,9	-43,8	-128,6	-0,2	323,8	10
% of Women in 2008	*59*	*68*	*65*	*69*	*74*	*75*	*73*	*64*
Human health and social work activities	21,4	242,2	132,7	183,9	59,2	-37,3	248,4	5
% of Women in 2008	*82*	*78*	*77*	*79*	*69*	*83*	*79*	*66*

Between Q1 2008 and Q1 2010, The Danish economy has experienced a loss of 121,5 thousands of employments: the "manufacturing" sector (in which the proportion of women was of 32% in the 2008) has lost 55,9 thousands of employments whereas the sector of "human health and social work activities" (in which the proportion of women was of 82% in the 2008) has increased by 21,4 thousands.
Source: Eurostat; [lfsq_egan2].

2.2. A sectoral analysis of the crisis on labour markets

2.2.1. Sectoral decomposition of employment

This section proposes a shift-share analysis of the variation of employment by industry and by sex. This analysis provides a measure of the role played by the sex segregation of the labour market in the evolution of women's employment during the period under review. Female workers might have been less protected by the sex sectoral segregation than they apparently seem to have been. In the evolution of female employment, two different effects must be distinguished. The first one is due to the change in employment inside each sector, and the second one is due to the evolution in the share of women in each sector. We decompose the variation of employment as follows (Rubery, 1988):

F_q is female employment in the quarter q of the year t,

E_{iqt} is the total employment in sector i in quarter q of year t,

αiqt is the share of women in sector i in quarter q of year t; and

$F_{qt} = \Sigma_i \, \alpha_{iqt} \, E_{iqt}$

Then:

$$\Delta F = F_{qt} - F_{qt-1} = [\Sigma_i \, \alpha_{iqt-1} \, (E_{iqt} - E_{iqt-1})] + [\Sigma_i \, E_{iqt-1} \, (\alpha_{iqt} - \alpha_{iqt-1})] + [\Sigma_i \, (E_{iqt} - E_{iqt-1}) \, (\alpha_{iqt} - \alpha_{iqt-1})]$$

[employment effect] + [share effect] + [interaction effect]

The effects are presented in percentages of female employment in $t - 1$: F_{qt-1}.

The sectoral analysis was constrained by the data, as there is a break in the statistical series between Q4 2007 and Q1 2008. Moreover, the quarterly sectoral data given by Eurostat are not seasonally adjusted, so the percentage change compared to the corresponding period of the previous year is used here. A shift-share analysis is conducted from Q1 2009 to Q1 2013, and the trends of two types of effects are distinguished:

— The employment effect indicates what would have been the female employment trend, if the share of women in each industry had remained the same. It can be interpreted as the sex sectoral segregation hypothesis of the gendered effect of the crisis on employment.

— The share effect indicates how the variation of the share of women in each industry has evolved during the period.

The share effect must be interpreted carefully, as the applied methodology compares the evolution of employment according to the gendered distribution among economic sectors that prevailed before the recession. The interpretation of the evolution of employment during the crisis is conducted in the light of this benchmark, which is not necessarily the right one.

When the share effect is close to zero, it means that the sex sectoral segregation explains much of the gendered impact of the crisis. When it differs from zero – negatively or positively – three interpretations are possible:

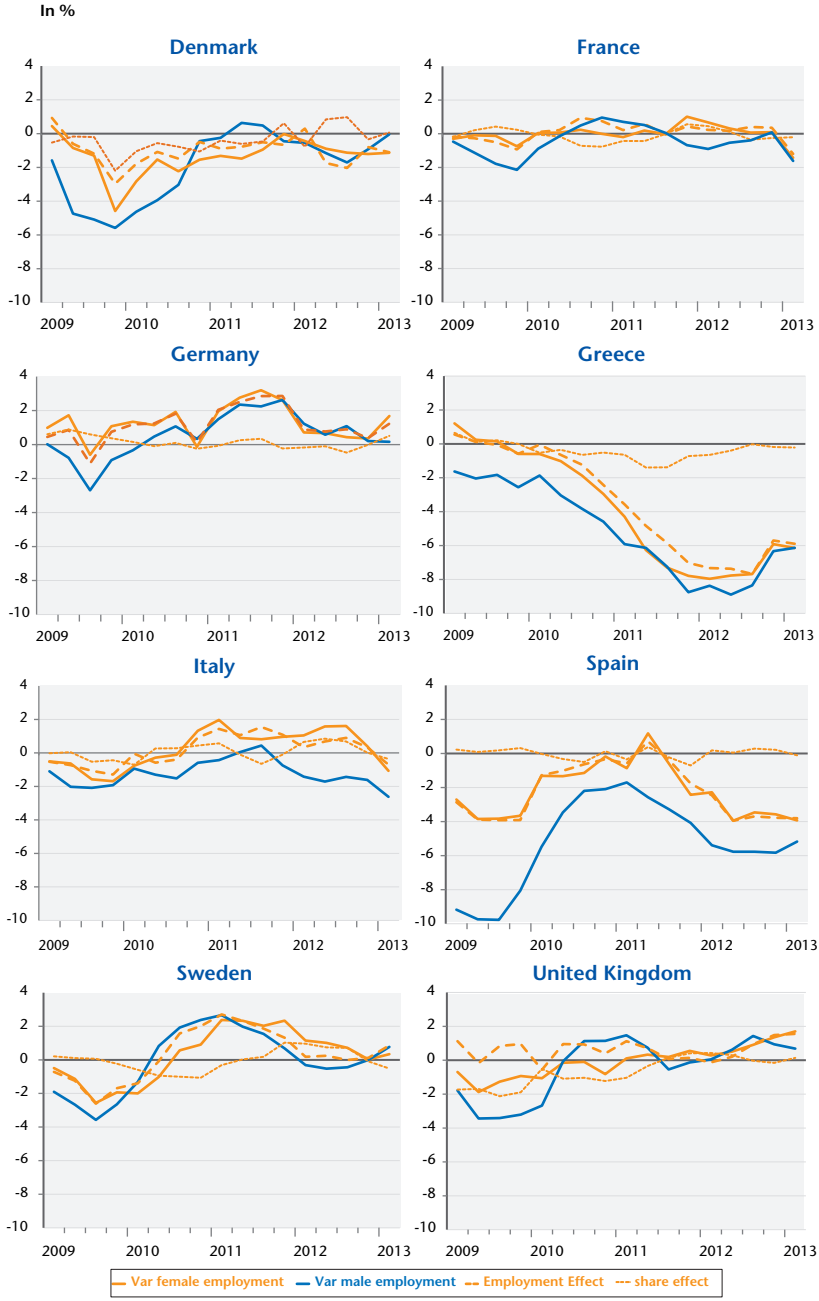
— The sex sectoral segregation observed through the NACE 2 digit database is not precise enough to measure the impact of sex sectoral segregation. For instance, the relevant level of sex sectoral segregation might not be between manufacturing and education, but between subsectors in manufacturing itself. Women might be over represented in specific manufacturing subsectors as workers, (for instance in textile industry) and that these subsectors might have been hit more by the recession. In this case, the share of women in manufacturing could decrease, and the evolution of this share effect might then be interpreted as follows: the sex sectoral segregation has not shielded women employment as it has often been said.

— Besides sex sectoral segregation, sex occupational segregation might also play a role in the gendered impact of the crisis. This could arise in specific subsectors: for example, men as workmen and women as secretaries. A negative share effect might be interpreted as the fact that the secretarial positions have been more concerned by job destruction than the workmen's positions.

— Inside each sector, the sex segregation of jobs may be low, and women and men might be allocated evenly across the subsectors. Then a negative share effect might be interpreted as the fact that women have been more laid off than men for similar jobs, or that job creations have been more often attributed to men than they used to be.

The statistical analysis of the share effect provides a different picture according to the country in question. The same methodology is applied across five different industries: manufacturing

Figures 29 to 36. Decomposition of the evolution of female employment and evolution of male employment



Percentage change compared to corresponding period of the previous year.
Source: Author's calculations using Eurostat, [lfsq_egan2].

and construction (in which men are over-represented), and in education, as well as human health and social work activities (in which women are over- represented). Lastly, there are also several sectors including the wholesale and retail trade, as well as the repair of motor vehicles and motorcycles, in which both sexes are represented almost equally. These sectors are main sectors in terms of employment (each of these five sectors represents between 7% and 20% of total employment in an economy).

Spain is a typical case in terms of the gender effect of the crisis. The sex sectoral segregation explains the gendered effect of the business cycle on employment, throughout the period under review. The share effect is close to zero, meaning that the share of women remained stable. Spanish women have been less affected by the crisis in terms of employment trends than men, and this is mainly explained by the fact they are over-represented in sectors that were less hit by the recession. But women also experienced decreases in employment during the recession stage, and during the austerity stage of the crisis, though the speed of the decrease has been lower than for men. Male employment collapsed by 24% between Q1 2008 and Q1 2013. This decrease represents a destruction of 2,870,000 jobs. Half of this drop occurred in the construction sector, and one quarter in manufacturing. Female employment decreased by 10%. In the main sectors, Spanish female employment has been less affected by the crisis than the male employment, both in absolute terms and in relative terms. In Spain, sex occupational segregation explains the gendered effect of the crisis, in all its stages. But the increase in female employment during the crisis has gone hand-in-hand with an increase in precariousness, low income and bad jobs for women, in a context of low income and economic pressure (Gonzales Cago *et al.*, 2014).

In Greece, in 2009, the gendered effect of the crisis on employment was also mainly due to sex sectoral segregation. But from Q4 2009 up to Q3 2012, there was a negative share effect. The speed of the decrease of female employment was higher than it should have been, if their share in each sector had remained the same. This means that female employment should have decreased less than it effectively has. The female employment curve reached the male one in Q3 2011, has been the same as the male one since Q3 2011. The third stage has not longer been gendered anymore: since

Q3 2012, the share effect has been close to zero. The general and impressive collapse of employment in Greece has affected both sexes. Between Q1 2008 and Q1 2013, male employment decreased by 22%, whereas female employment fell by 17%. Men faced a dramatic decrease of employment in the construction sector (with a 37% fall in jobs). In both cases, job destruction has also been concentrated in the manufacturing sector (27% of male job destructions, and 20% for female job losses).

In Greece and Spain, during the whole period under review (from Q1 2008 to Q1 2013), men experienced more job losses than women in the five main economic sectors, both in absolute and relative terms (i.e. the share effect is close to zero).

In Italy, the story is more complicated and not linear. From Q2 2009 to Q2 2010, the share effect was slightly negative, close to -1%. During the collapse stage, female employment was less affected than male employment, but the gender gap should have been lower than it was, if the allocation of women in the different economic sectors had remained the same. So women were more affected than men in relative terms. From Q1 2011 to Q1 2013, women benefited from a positive share effect, meaning the evolution of female employment was more favourable than it should have been. The gendered impact of the crisis on employment was partially explained by sex occupational segregation. During the whole period under review (from Q1 2008 to Q1 2013), men lost more jobs than women in the manufacturing sector (respectively 433,000 and 180,000 jobs), but female workers experienced a disproportional loss of jobs according to their share of work in this sector in 2008. If their share had remained stable, female workers in manufacturing would have experienced a loss of 125,000 jobs, instead of the 180,000 observed. In contrast, they were less affected in the retail sector, but this sector is more heterogeneous in its subsectors. And in the education sector, women have been hit less in relative terms by the destruction of jobs than men.

In Sweden, the share effect had little or no impact during the collapse stage of the crisis. During the recovery stage, (from Q4 2009 to Q1 2011), the share effect was negative but small. The evolution in employment should have been more favourable for women, if their share in each economic sector had remained stable. The measures taken by the Swedish government at the end

of 2008 and during the first half of 2009 included an extensive investment and maintenance plan in the country's road and rail networks (Anxo, 2011). The Swedish stimulus packages might have benefited men more than women, so that the share of women decreased in the sectors that were aided. During the second stage, women benefited from a positive share effect, and the rate of increase of female employment has been higher than it should have been, if the share of women in each sector had remained stable. To sum up, in Sweden women were relatively more affected than men, in relative terms, in the first part of the crisis. But they have benefited relatively more from the last stage of the crisis, in terms of employment. A focus on the main economic sectors indicates that during the whole period under review, employment in the "human health and social work activities" sector has decreased by around 13,000 jobs. At the municipality and county levels, which are responsible for these activities (social services, education and health), public employment declined due to severe budget cuts, despite the additional allocations by Sweden's national government to local authorities (Anxo, 2011). The decrease in "human health and social work activities" has disproportionally affected women: they have experienced as decrease of 25,000 jobs, whereas men have benefited from an increase of 13,000 jobs in this sector. In education, men have benefited from 70% of the jobs created. In both sectors, the share of women decreased between Q1 2008 and Q1 2013.

In France, the share effect has evolved in a pendulum swing, as in Italy: but in the opposite direction. During the collapse stage, there was a positive share effect that compensated partially the decrease of female employment: the speed of the fall in female employment should have been higher than was actually observed. Men were disproportionally affected by job losses, so that the share of women in employment increased. During the second phase, the share effect became strongly negative, meaning that women were less concerned by the recovery phase than they should have been. This might have been linked to the first stage, as a form of catching-up by men during the stimulus phases of the crisis. 2011 was characterized by a positive share effect that benefited women's employment: it increased at a faster pace than it should

have. However, by the end of 2012 it seems that the share effect became negative.

In Germany, a positive share effect at the beginning of the period studied (Q1 2009 to Q2 2012) may be observed: female employment increased more it should have done if the share of women in each sector had remained stable. During the remaining period, there was little or no share effect: the sex sectoral segregation of employment explains the gendered impact of the crisis in Germany.

The most interesting cases are the UK and Denmark. In both countries, from Q1 2009 to Q3 2011, the share effect was negative and large: women should have benefited more of the employment evolution than they actually did. In Denmark, female employment should have decreased more slowly than it did. In the UK, women should have experienced a positive trend in employment, but according to the evolution in their share in sectors, female employment actually decreased. Then, in absolute terms women were less affected by the recession than men, in terms of job trends, but in relative terms they were more hit by the economic shock. From Q3 2011 (the third stage of the crisis), the share effect has had little or no impact in the UK, whereas in Denmark this effect has been positive, but close to 1%. In both countries, women experienced more job losses than they should have according to the gender composition that prevailed before the recession in manufacturing, construction, wholesale and retail trade, repair of motor vehicles and motorcycles, for the period Q1 2008 to Q1 2013. In the UK, the wholesale and retail trade, as well as the repair of motor vehicles and the motor sector suffered cuts of 266,000 jobs, more than 80% of these job losses falling on women. Women experienced a decrease of 220,000 jobs in this sector, instead of 132,000, had their share remained stable. The creation of jobs in the education sector benefited women less than it should have, whereas in Denmark, 80% of the jobs created in education concerned women (instead of 60% if their share in education had remained stable).

In summary, the sex sectoral segregation explains most of gendered impact of the crisis in Spain, Greece, Germany, and to a lesser extent in France, Sweden and Italy. In the UK and Denmark, female workers have been relatively more affected than they should have been, according to the sex sectoral segregation. In

these countries, the gendered effect of the crisis on jobs cannot be explained only by the fact the men and women do not work in the same sectors, since the share of women in industries has changed unfavourably for them.

2.2.2. Gender employment and austerity policies

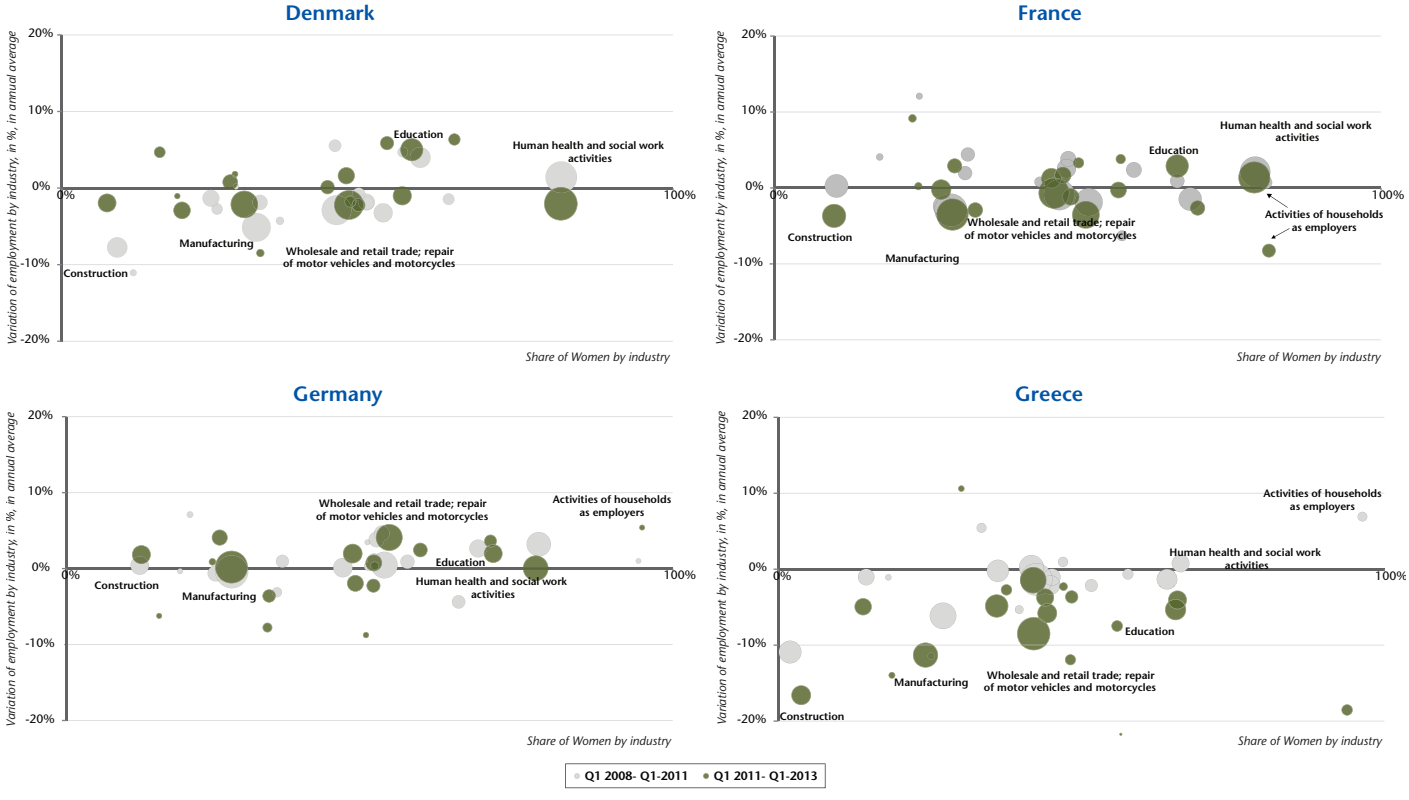
The recession that occurred in 2008 and 2009 (first stage here) has widened output gaps and increased public deficits. This increase was a consequence of both automatic stabilisers, as the recession decreased tax revenues and pushed up social and public expenditures, and of reflationary fiscal policies implemented in 2008 and 2009, in order to dampen the economic consequences of the crisis. The UK and Sweden may also have benefited from a depreciation of their real effective exchange rates. The implementation of expansionary fiscal policies at first managed to contain the economic consequences of the financial crisis, and then contributed to renewed growth (iAGS, 2013). The stimulus packages were targeted at sectors which had been the most affected by the recession, basically construction and manufacturing, and in which men are over-represented. This phase corresponds to the second stage of the crisis in this paper. The third phase occurred when European governments started to focus on fiscal consolidation. Some governments were preoccupied by rising public debt, and worried about the risk of a surge in interest rates and the constraints of the EU's Stability and Growth Pact rule, according to which public deficits should be brought back to 3% of GDP. They engaged in austerity early on, starting in 2010, and believing that exceptional circumstances could no longer be invoked. By the second half of 2010, the majority of European countries had put austerity measures in place. Thus, in spite of a fragile economic situation, most countries started to tighten fiscal policies in 2010 or in 2011 (iAGS, 2014). This phase corresponds to the third stage of the crisis. The austerity plans have induced spending cuts in public sectors and social sectors, with job cuts and freezes in public sectors ((Theodoropoulous and Watt, 2011; Leschke and Jepsen, 2011; Smith, 2009).

In most countries, austerity policies have been implemented with a gender blind manner. However, the situation of women and men on the labour market is unequal and different (in terms of

participation, horizontal and vertical segregation, etc.). The consequences of these measures are expected to be gendered. The austerity phase is expected to be less favourable to women, acting through two different channels. Firstly, as these sectors are dominated by female employment, cuts in public spending should mechanically lead to job destruction in these sectors, and working conditions of employees might be deteriorated through greater pressure at work and increases in working time to compensate the decreases in employment. Secondly as the social and public sectors pay a central role in work-life reconciliation policies (in terms of parental leave, childcare, social services, elderly care, etc.) women are likely to be more affected, as they are the main users of these services. Women might struggle to participate in the labour market, or they might be affected in their daily lives through tougher constraints in their work-life balances.

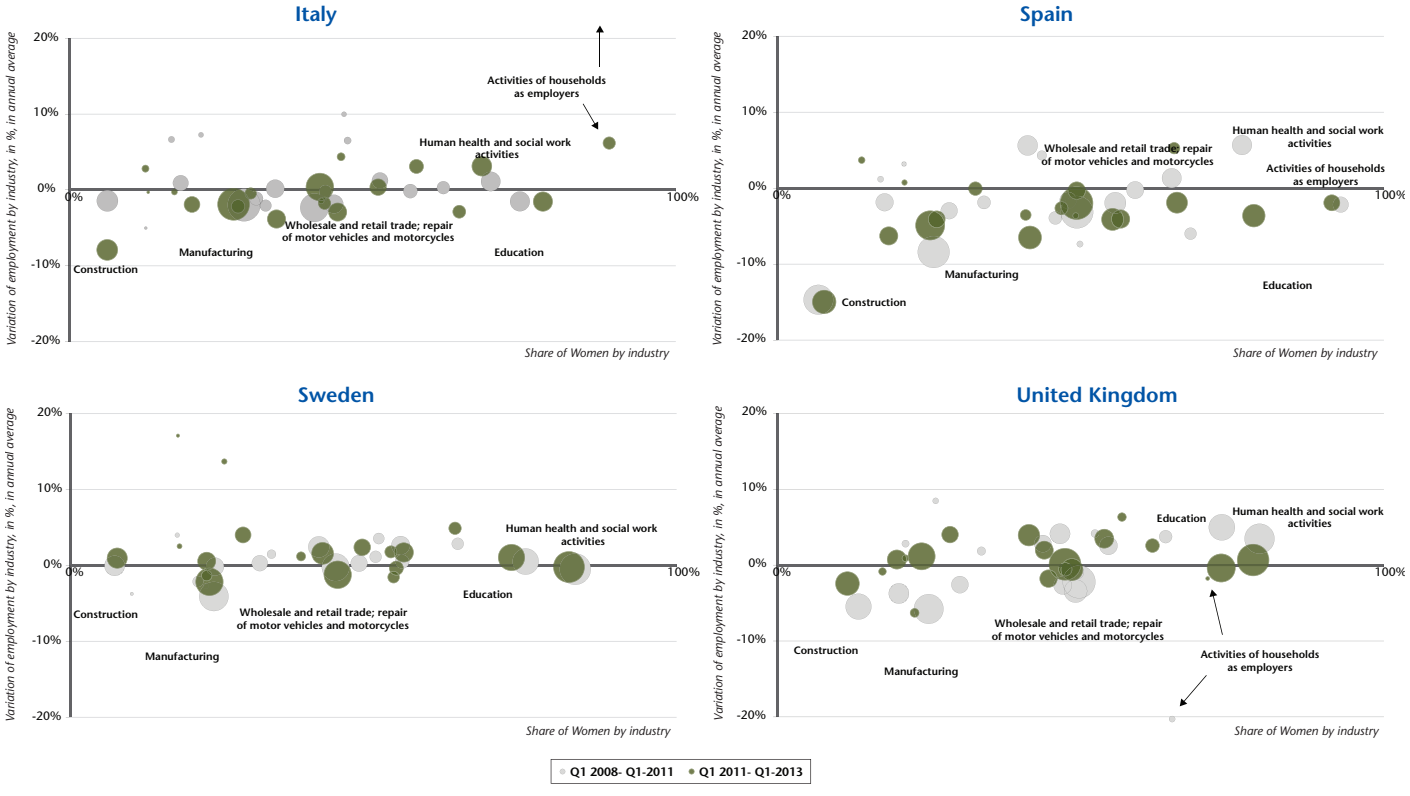
Fitgures 37 to 44 show the possible "seesaw effect" in terms of evolution of employment in the countries examined. The period under review has been cut in two sub-periods (instead of three). The first one runs from Q1 2008 to Q1 2011. The second period stretches from Q1 2011 to Q1 2013 (that is to say, the austerity phase). The x-axis shows the proportion of women in each sector, at the beginning of each period (Q1 2008 for the first period and Q1 2011 for the second one). The y-axis shows the evolution in percentage of employment (for all workers) for each sector, in averages per year. The size of the circles gives the size of each sector in terms of employment (the share of each sector in the total employment), at the beginning of each period. The lighter circles represent the evolution of employment between Q1 2008 and Q1 2011 in averages per year, and the darker circles represent the evolution of employment between Q1 2011 and Q1 2013, in average rates per year.

Figures 37 to 44. Variation of employment by industry according to the share of women



Source: Author's calculations using Eurostat,[lfsq_egan2].

(suite) Figures 37 to 44. Variation of employment by industry according to the share of women



Source: Author's calculations using Eurostat,[lfsq_egan2].

A "seesaw effect" may be observed in Spain, in the UK, in Denmark and to a lesser extent in Italy. In these countries, the austerity phase has led to a degradation in employment in female dominated sectors, whereas a relative "recovery" (or a smaller decline) in male dominated sectors in observed. Some sectors have started to lose employment as a response to the demand shock, this is the case of "activities with households as employers" in Greece, Spain, France, Italy. In Germany, this sector kept growing during the period under review. The sector is emblematic of gender norms and of the sexual division labour, not only in the family (hiring a housekeeper reduces the sexual division of labour between partners), but also on the labour market as women are over-represented in this sector.

In Spain, construction and manufacturing are still destroying jobs. This decrease is impressive for the construction sector (-15% per year during both periods, and the reduction of the circle shows the dramatic contraction of this sector). But the female sectors have started to be affected to during the last stage of the crisis, as shown by the way the increase of employment in education during the first stage (1% per year on average) has turned into a decrease (-2% per year on average) during the following stage. In the public administration sector, employment increased by 6% per year on average during the first part of the period, and then decreased by 6% per year on average during the second phase. From Q1 2008 to Q1 2011, women benefited from the creation of jobs in the human health and social work activities sector: this sector experienced an increase in employment by 200,000, and more than 90% of these extra jobs benefited women. They were also clearly less exposed than men by job destructions in the sectors most affected (manufacturing and construction). But women were hit nonetheless. The manufacturing sector lost 995,000 jobs between Q1 2008 and Q1 2013, and 25% of jobs were lost by women. Gonzales Cago *et al.* (2014) identify two phases in the implementation of austerity policies. The first one ran from May 2010 to November 2011 and was characterized by the withdrawal of gender equality measures (such as increased paternity leave for instance) that were no longer been seen as a priority during the crisis. The second phase of austerity started in December 2011 and involved a hardening of austerity, with increases in taxation and cuts in public spending, through a new Organic Law on Budget Stability (Ley Organica de Estabilidad

Presupuestaria). Eurostat data show that female employment started worsening as of the Q1 2011. An important reform of the public health system has been implemented in order to reduce the public spending. The public plan to extend education, "Educa3" has been stopped, and the number of teachers has been reduced through an increase in the weekly working hours. The number of students per classroom has increased by 20%. The austerity policies have also concerned the long term care sector, involving a drastic reduction in public funding for this sector (Gonzales Cago *et al.*, 2014). As a result of these policies, the human health and social work activities, as well the education sector (which had seen spending increase by respectively 6% and 1% on average per year between Q1 2008 and Q1 2011), experienced respective decreases of 4% and 2% in spending per year during the second period (Q1 2011 and Q1 2013). Women faced job destruction in sectors where they are over-represented. From Q1 2011 to Q1 2013, 100,000 jobs were destroyed in the human health and social work activities sector, and 88% of this reduction of employment concerned women. During both phases, employment in the sector of "activities with households as employers" (characterised by a feminisation rate of more than 90%) fell by 2% per year on average. In response to the decrease in their net income, households reduced their consumption of private services (child or elderly care or housekeeping); they can no longer afford to use these private services.

In the UK, the spending cuts were initially forecast to lead to a loss of around 490,000 jobs in the public sector by 2015. But this figure has been revised upwards to 900,000 job loss between 2011 and 2018 (Rubery and Rafferty, 2014). The protection offered by public sector to mainly female workers (during the first phase of the crisis) has been eroded by the austerity plan, which started in 2010. Gendered effects of austerity are complicated, since the distribution of women among the different sectors changed during the period under review (see the previous section). In the human health and social work activities sector, employment increased by 3% during the first period, and by less than 1% during the second one. However, women still benefited from job creation in this sector, between Q1 2011 and Q1 2013 (+76,000), whereas men were affected by job destruction (-26,000). In education and in public administration, women faced a loss of respectively 40,000 and

20,000 jobs, whereas men experienced an increase of 16,000 jobs in education and a small decrease (-2,500) in public administration.

In Denmark, the fiscal consolidation plan (*Genopretningspakken*) was announced in May 2010. It contained cuts in spending amounting to 2% of GDP, between 2010 and 2015. This austerity plan consisted in cuts and savings to be made in the public sector (education, healthcare and local authorities: see Lekschen and Jepsen, 2011). Despite this, we may observe that employment in the education sector increased during the period under review, and women benefited most from these job creations. In the human health and social work activities sector, the situation has been totally different: between Q1 2011 and Q1 2013, employment decreased by 4%, and 3/4 of this reduction affected women. The public administration sector lost more than 20,000 jobs during the whole period, and 2/3 of this reduction concerned women. The manufacturing sector has kept losing jobs, but at a slower rate of -2% on average per year (instead of -5% on average per year between 2008 and 2011).

In Sweden, the circles have gone up for all sectors. In the manufacturing, employment is still being destroyed, but the pace is far slower (-7% on average per year for the first period, to -1% for the second one). Female dominated sectors have also started to recover: for instance the education sector and the human health and social work activities respectively saw employment decrease by -1% and -3%, during the first period, but then jobs grew by 2% and 1% in the second one. During the first part of the crisis (2008-2009), the Swedish government opted for an expansionary fiscal policy (in contrast to the reaction to 1990s crisis: see Anxo, 2011).[6]

In Italy, no real seesaw effect can be observed. But the situation is unclear because of the interaction of different types of effects: the reform in the education system induced a huge decrease of employment in this sector between 2008 and 2011, and the regularisation of immigrant employees in the care sector has boosted employment in the human health and social work activities sector. The first austerity plan was announced in the middle of 2011. In the fiscal consolidation plan, 2/3 of the adjustment was

6. Public sector consumption increased by 1.5 per cent in 2008, and continued to increase during the first half of 2009, Monetary Policy Report, October 2009, Riskbank, http://www.riksbank.se/Upload/Dokument_riksbank/Kat_publicerat/Rapporter/2009/mpr_3_09oct.pdf

supposed to come from the reduction in public expenditures (frozen wages of civil servants, cuts in public services, etc.). In July 2012, a second wave of austerity was announced, consisting of a reduction by 10% in the number of public sector employees and by 20% in the number of executives. The downsizing is targeted towards the health sector and local administrations, but also justice and universities (Verashchagina and Capparucci, 2014). These measures will imply a reduction of female employment, so their effects are still to be expected in the next quarters.

In Germany, it seems that there has not specifically been a seesaw effect, but Germany does not face a crisis as do other European countries. In any case, employment in the human health and social work activities has decreased by 100,000, and 84% of this loss has been experienced by women.

Greece is a specific case. In contrast to all the other countries under review, the circles keep going down in all sectors, whatever the proportion of women in each sector. The austerity phase has been characterized by a general collapse of employment affecting both men and women, and now all sectors. Household demand has been affected by the wages and pension cuts and also the tax increases that were implemented in 2010 and 2011. The decrease of jobs in the "services to households as employers" sector, that were mainly occupied by migrant women, is the result of the fall in demand due to the dramatic losses of income suffered by the middle-class households (Karamessini, 2014).

In France, where employment has been more stable, it is difficult to identify the beginning of a seesaw effect that would be unfavourable to female employment. Employment in education has decreased by 1% per year during the crisis, and employment in public administration fell by 1% during the first stage, and then by 2% between 2010 and 2011. During the second stage, the education sector created jobs (+3%). These trends could be the result of the end of the "no replacement of one retired non-teaching worker out of two" rule, and the beginning of the *Education Plan*, announced by the Presidency of François Hollande, as of May 2012[7]. The share of women in education decreased between both

7. In 2012, 4 326 full time equivalent jobs have been created in the Education Nationale, http://multimedia.education.gouv.fr/2013_PLF2014/#/4/

periods, meaning that women have benefited less from the creation of jobs in education than they otherwise would have done.

3. Conclusions

The economic crisis which hit European countries in 2008 has deeply affected labour markets. Three stages of the crisis have been identified here: the collapse stage, the rebound stage and the austerity stage. The countries under review have gone through these stages differently. Gendered consequences of the crisis are observed in all countries. The sex segregation of the labour markets is a relevant explanation of the gendered impact of the business cycle. Women are protected by their concentration in sectors that are not directly affected by the recession, whereas male employment is in the front line of job destruction. However, a sectoral decomposition of employment reveals a more nuanced picture of these explanations. In Spain, sex sectoral segregation explains the evolution of differences in female and male employment. Spanish women have suffered from the crisis, but less than men. This trend is mainly explained by the fact that male-dominated sectors have been disproportionally more affected by the collapse of employment than female sectors. But in some countries, the share of women in sectors has changed, so that the evolution of female employment has been less favourable than it would have been, if their distribution across each sector had remained unchanged. The results show that despite the sex occupational and sectoral segregation of labour markets, the reallocation of jobs during the crisis has a clear gendered dimension in some countries, especially in the UK and Denmark and to a lesser extent in France. The austerity phase that is expected to be less favourable to female employment seems to have started in some countries (Spain, the UK, Denmark). But other countries have not experienced such trends (Sweden, Italy and Germany). In Greece, both female and male employment has kept decreasing, and the third stage of the crisis has affect women and men with equal magnitude. This paper proposes a statistical analysis of the evolution of employment during the crisis, by gender and by sectors. It does not take into account the evolution of part-time jobs and the changing quality of employment during the crisis, which would require further analysis.

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