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Decomposing Gender Unemployment Differentials in Greece

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Διαφορές στα ποσοστά ανεργίας ανδρών γυναικών στην Ελλάδα

Ιωάννης Χολέζας, Νικόλαος Κ. Κανελλόπουλος

ΠΕΡΙΛΗΨΗ

Κίνητρο για αυτή την εργασία αποτελεί το γεγονός ότι οι γυναίκες στην Ελλάδα αντιμετωπίζουν διαχρονικά υψηλότερα ποσοστά ανεργίας σε σύγκριση με τους άνδρες, ένα φαινόμενο γνωστό ως χάσμα της ανεργίας μεταξύ των φύλων. Το χάσμα της ανεργίας ανάμεσα σε άνδρες και γυναίκες εγείρει ζητήματα δικαιοσύνης και ισότητας ευκαιριών, επειδή θεωρείται άδικο εάν παρόμοια άτομα αντιμετωπίζουν διαφορετική πιθανότητα ανεργίας λόγω φύλου. Επίσης, εγείρονται θέματα αποτελεσματικότητας, καθώς αποτελεί σπατάλη πόρων να απασχολούνται συχνότερα λιγότερο παραγωγικά άτομα, απλά και μόνο λόγω φύλου. Αυτά, βεβαίως, αποκτούν ακόμη μεγαλύτερη σημασία σε περιόδους οικονομικής δυσχέρειας. Παρόλο που σημαντικές διαφυλικές διαφορές στα ποσοστά ανεργίας καταγράφονται και σε άλλες ευρωπαϊκές χώρες, στην Ελλάδα εντοπίζεται η υψηλότερη. Προς τούτο είναι χρήσιμο για τους σχεδιαστές πολιτικής, και για όποιον ενδιαφέρεται, να γνωρίζουν επακριβώς πού οφείλεται αυτή η διαφορά και πώς συσχετίζεται με άλλα βασικά μεγέθη και λειτουργίες της αγοράς εργασίας. Διαφορετικό μίγμα πολιτικής απαιτείται εάν το χάσμα ανεργίας οφείλεται σε ανεπαρκή παραγωγικά χαρακτηριστικά των γυναικών, και διαφορετικό μίγμα, αν προκύπτει από διαφορετική αντιμετώπιση των γυναικών στην αγορά εργασίας.

Στο εμπειρικό τμήμα της εργασίας αρχικά, χρησιμοποιώντας ατομικά δεδομένα, υπολογίζεται η πιθανότητα ανεργίας ανά φύλο. Στη συνέχεια, με κατάλληλες τεχνικές, οι οποίες ταιριάζουν σε μη γραμμικά υποδείγματα, η διαφορά της πιθανότητας ανεργίας μεταξύ των φύλων διασπάται σε δύο βασικές συνιστώσες. Η πρώτη συνιστώσα αντιπροσωπεύει το κομμάτι του χάσματος που οφείλεται σε διαφορές στα παρατηρούμενα χαρακτηριστικά ανδρών και γυναικών, ενώ η δεύτερη συνιστώσα ποσοτικοποιεί το κομμάτι της διαφοράς που οφείλεται στο πώς η αγορά εργασίας-εργοδότες αξιολογούν τα ίδια χαρακτηριστικά ανά φύλο. Η δεύτερη συνιστώσα αναφέρεται στη βιβλιογραφία συνήθως ως μη εξηγήσιμο ή ανερμήνευτο κομμάτι του χάσματος και ορισμένοι ερευνητές την αποδίδουν σε διακρίσεις σε βάρος των γυναικών. Τα στοιχεία που χρησιμοποιούνται προέρχονται από την ΕΛΣΤΑΤ και είναι οι τριμηνιαίες έρευνες εργατικού δυναμικού για τα έτη 2004-2014. Προκειμένου να γίνει κατανοητή η εξέλιξη του χάσματος της ανεργίας, καθώς και ο μηχανισμός διαμόρφωσής του, η ανάλυση πραγματοποιείται χωριστά για την περίοδο πριν από την κρίση (2004-2007) και για την περίοδο κατά τη διάρκεια της κρίσης (2010-2014).

Από τα περιγραφικά στοιχεία προκύπτει ότι το ποσοστό ανεργίας των γυναικών στις αρχές της δεκαετίας του 1980 είναι υψηλότερο από το αντίστοιχο των ανδρών κατά περίπου 6 εκατοστιαίες μονάδες. Το χάσμα της ανεργίας αυξάνεται συνεχώς μέχρι και το 1999, οπότε λαμβάνει τη μέγιστή τιμή του σχεδόν 10,5 εκατοστιαίες μονάδες, κυρίως ως αποτέλεσμα της μείωσης της ανεργίας των ανδρών και της αύξησης της ανεργίας των γυναικών. Έκτοτε, λόγω της ταχύτερης και υψηλότερης αύξησης της ανεργίας των ανδρών, μειώνεται αλλά είναι σταθερά υψηλότερο από 6 εκατοστιαίες μονάδες, κατατάσσοντας την Ελλάδα ως τη χώρα με το υψηλότερο θετικό χάσμα ανεργίας μεταξύ ανδρών και γυναικών.

Από την ανάλυση προκύπτει ότι το μέρος του χάσματος της ανεργίας, το οποίο μπορεί να αποδοθεί στις διαφορές στα χαρακτηριστικά ανδρών-γυναικών είναι το μεγαλύτερο και παραμένει διαχρονικά σχετικά σταθερό, ακόμα και κατά τη διάρκεια της κρίσης. Εντούτοις, η σχετική του συνεισφορά αυξάνεται, λόγω της σημαντικής μείωσης της ανερμήνευτης συνιστώσας, η οποία καταδεικνύει έναν εξορθολογισμό της αγοράς εργασίας υπέρ των γυναικών. Η μείωση της ανερμήνευτης συνιστώσας πιθανόν να οφείλεται στην αυξανόμενη εισροή γυναικών στην αγορά εργασίας η οποία άλλαξε προς το καλύτερο τα χαρακτηριστικά τους, μιας και οι νεότερες γυναίκες έχουν υψηλότερη εκπαίδευση από τις πιο ηλικιωμένες, καθώς και από τους άνδρες. Ο πιο σημαντικός προσδιοριστικός παράγοντας του χάσματος της ανεργίας φαίνεται να είναι η θέση του ατόμου στην αγορά εργασίας κατά το προηγούμενο έτος. Το στοιχείο αυτό μάλλον χρησιμοποιείται ως ένδειξη παραγωγικότητας από τους εργοδότες καταδεικνύοντας και τις αγκυλώσεις της ελληνικής αγοράς εργασίας. Ωστόσο, υπάρχουν σημαντικές διαφορές αναφορικά με τον κλάδο απασχόλησης το προηγούμενο έτος. Ειδικότερα, κλάδοι οι οποίοι απασχολούν κατά κύριο λόγο άνδρες πλήγηκαν περισσότερο από την ύφεση αυξάνοντας το ποσοστό ανεργίας των ανδρών και μειώνοντας το συνολικό κενό. Επιπλέον, σημαντική συνεισφορά έχουν και άλλες μεταβλητές, όπως η ηλικία, η εκπαίδευση και η εθνικότητα.

Αναφορικά με τη σχέση του χάσματος της ανεργίας μεταξύ των φύλων και των βασικών συστατικών του με διάφορες μεταβλητές που περιγράφουν την ελληνική αγορά εργασίας και τους θεσμούς λειτουργίας της, προκύπτει ότι υπάρχει στατιστικά σημαντική σχέση, άλλοτε αρνητική και άλλοτε θετική.

Decomposing Gender Unemployment Differentials in Greece

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Abstract

Women in Greece traditionally face higher unemployment rates compared with men, a phenomenon known as gender unemployment gap. Analyzing this gap in a certain labor market requires the use of detailed individual micro data, which we draw from the quarterly Labor Force Surveys. In order to decompose the observed unemployment gap to its components, we trace the determining factors of the probability of unemployment by gender. Our results reveal that, during the recession, the unexplained component of the gap decreased, perhaps as part of a rationalization process in the labor market. The detailed decomposition of the unemployment gap suggests the importance of prior employment status, which however varies significantly by industry, along with other variables, such as age, education and often ethnicity. Furthermore, the unemployment gap seems to be correlated with certain institutional features of the Greek labor market, such as the strictness of employment protection regulations. These findings have important policy implications.

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Decomposing Gender Unemployment Differentials in Greece

1. Introduction

The term *gender differential* in the labour economics literature usually refers to wage differences between men and women. As shown in numerous studies worldwide, a sizeable share of gender wage differentials across countries cannot be justified by differences in human capital characteristics between men and women and, therefore, it is usually mostly attributed to discrimination. Greece is no exception to the rule. This study attempts to address a different, although similar, matter: gender unemployment differentials. According to Olivetti and Petrongolo (2006) these two are related, since it is possible that the discrimination against females, which causes the wage gap, extends to the likelihood of being employed and, thus, it may also cause an unemployment gap. Such an outcome would materialise, for instance, if human capital requirements in order to enter the labour market were higher for women.

The motivation for this paper is the substantially higher unemployment rate of women in Greece compared to that of men before, as well as, during the economic depression, which raises issues of both equity and efficiency. On equity grounds, it is simply unfair for otherwise identical individuals (i.e. equally productive) to have different probabilities (chances) of being employed based on their gender. On efficiency grounds, it is a waste of resources to employ less productive individuals as opposed to more productive ones, simply because the latter are women. This becomes even more important at times of economic distress. Moreover, note that the gender unemployment differential in Greece is the largest across EU countries. The question we attempt to answer is which are the factors causing this wide gender unemployment differential in Greece and, consequently, what actions could be implemented to narrow it. In order to do that, we employ a decomposition method which makes a distinction between the explained part of the differential, i.e. the part which can be attributed to differences in measurable characteristics of men and women, and the unexplained part, i.e. the part of the gender unemployment gap which is a result of how observable characteristics are rewarded by employers and, usually, is attributed to discrimination in the labour market as well as other unobservable factors.

The paper proceeds as follows. The next section builds the case for analysing gender unemployment differentials, while section 3 provides evidence for Greece's distinctiveness. The methodological issues and estimation methods chosen as well as the data from the Labour Force Surveys (LFS) along with some descriptive statistics are presented in section 4. Section 5 discusses the results, while section 6 concludes.

2. A review of the literature

The term gender unemployment differential is used to describe a situation in a country in which females face higher/lower unemployment rates compared with males. In accordance with the literature, we refer to a positive unemployment differential when females face

higher unemployment rates and to a negative unemployment differential when males face higher unemployment rates. The methodology commonly used in most studies involves the estimation of multivariate models, usually probit, static or dynamic, depending on the data employed, followed by the decomposition of the unemployment gap to its components (see Ortega, 2008). Moreover, some authors examine flows into and out of employment, unemployment and inactivity through quantitative search models as an explanation for unemployment gaps (see Arslan and Taskin, 2011).

Evidence from around the world suggests that there are a lot of variations when it comes to gender unemployment gaps. For instance, Azmat et al. (2006) categorize 22 OECD countries into five broad groups ranging from those with the largest to those with the smallest gender unemployment gaps. The largest gender unemployment gap is reported in Mediterranean countries, Greece included, and the smallest in Anglo-Saxon countries, i.e. USA, UK, etc., while "*Germanic*" countries, i.e. Germany, Austria and Switzerland, rank in the middle. Regarding factors shaping the gender unemployment gap, they seem to point to social attitudes, i.e. whether men are considered more deserving of a job than women, but still a large proportion of the gender unemployment differential cannot be explained, similarly to the case of the gender wage gap.[1] A number of factors seem to explain a large share of gender unemployment differences across 21 OECD countries (Arslan and Taskin, 2011). These include labour market characteristics (e.g. earnings tax, size of the unemployment benefit and duration, average working hours, average earnings and gender pay gap), home production and imperfect monitoring of job offers. Arslan and Taskin argue that these factors seem to justify heterogeneity in unemployment rates between genders and countries via their effect on the accept/reject decisions of individuals.

On the other hand, there are studies which argue that in many OECD member countries the strengthening of women's labour force attachment, the variation in job-loss rate and the lower female labour force participation compared with males are factors responsible for gender unemployment gaps (Albanesi and Şahin, 2013). For instance, a 3.0 percentage points decline in labour force participation rate due to weaker labour force attachment leads to a 0.1 percentage points increase in the unemployment rate. It is interesting, given their diverse economic history, that several new EU member-states also exhibit significant differences with respect to gender unemployment differentials (Bičáková, 2010). It is argued that family leave policies are responsible for differences across countries, since married women tend to leave the labour market after having children or stay economically inactive for a long time. Regarding variations of the gender unemployment differential between countries, unexplained differences between genders seem to be dominant in most countries.

Within country variations in unemployment differentials over time draw economists' interest as well. For instance, the gender unemployment differential in the USA varied significantly throughout the years according to Albanesi and Şahin (2013). It was positive until the 1980 (starting in 1948), but after the 1980 the gap almost disappeared, except for

[1] They reject a number of other possible factors, such as the types of jobs men and women hold, the differences in benefit receipt, the gender wage gap, the differences in search intensity and the difference in labour market transitions caused by the allocation of household responsibilities.

recessionary periods, when men's unemployment rate exceeds women's unemployment rate, i.e. a negative gender unemployment gap and a complete reversal of previous experience. Others support the view that the increasing/decreasing labour force attachment of women/men over time can explain even half of the unemployment gap's evolution (DeBoer and Seeborg, 1989).[2] The other half is due to changes in male employment caused by negative developments in male dominated industries.[3] The adverse effect of gender segregation across industries is also noted in Şahin et al. (2009) regarding the last recession in the USA in 2007. Albanesi and Şahin (2013) argue that gender differences in industry employment composition are important only during recessions, which explains the faster increase in male unemployment at recessionary times and the narrowing of the gap over time. Mohanty (2003), on the other hand, points to the higher wage flexibility of women as a key factor leading to closing unemployment gaps, since in theory discrimination against them can be counterbalanced by lower wages; a fact, which obviously leads to wage gaps. Moreover, Mohanty (1998) points to the expansion of employment in the public sector and in services related activities[4] and to migration flows within the USA for explaining the shrinking gender unemployment gap over time.

The situation in other parts of the world is often very different. For example, Myatt and Murrell (1990) conclude that the weaker labour force attachment of women in Canada explains only a quarter of the unemployment gap, contrary to what Albanesi and Şahin (2013) claim, while another small share is explained by the labour market's inadequacy to absorb new entrants, who are mostly women. The largest part, though, is explained by minimum wage: approximately 3% on average throughout the period examined (1966-1987). This means that lowering the minimum wage could even lead to a negative gender unemployment differential, i.e. lower unemployment rate for women, since women tend to concentrate in low paying jobs so that a lower minimum wage would lead to hiring more women, thus reducing their unemployment rate.

Variations in the gender unemployment gap are also reported in Argentina where during the nineties the unemployment gap increased by more than five percentage points. Ortega (2008) shows that the gap can be primarily attributed to labour market returns to individual characteristics varied by gender and, in particular, in the different effect of household income and marital status. Thus, it seems that differences in men's and women's behaviour and the diverse way employers treat men and women both lie behind gender unemployment differentials in Argentina. The opposite seems to hold in the Czech and the Slovak republics, where gender unemployment gaps are explained to a large extent by

[2] Blau and Ferber (1986) conclude that the weaker labour force attachment of women raises their unemployment rate relative to men. Furthermore, Jones (1983) finds that the amount of prior work experience is positively related to the probability of re-entering the labour market after time spent out of the labour force without an unemployment spell.

[3] This means that men tend to lose their jobs more often, because specific industries in which they are usually employed shrink over time (see also DeBoer and Seeborg, 1984 and Seeborg and DeBoer, 1987).

[4] Brown et al. (2011) report that women's real hourly reservation wage is higher than men's (see page 7, Figure 1). Note that these sectors usually pay higher wages, partly because they are less exposed to international competition, so a larger share of women is expected to be employed there, both due to their higher reservation wage and their preferences, e.g. it is easier to reconcile work and family life.

differences in the observed characteristics of men and women, which determine each gender's probability to exit the state of unemployment (Ham et al., 1999). Moreover, Lauerová and Terrell (2002) point to married women and their lower probability of moving from unemployment to employment and to single women and their lower probability of moving from inactivity to employment compared with men of similar characteristics.

As far as Greece is concerned, the only systematic effort to explain gender differences regarding unemployment is by Livanos et al. (2009), who investigate employment discrimination in Greece and the UK. As discussed above (Azmat et al., 2006), Greece and the UK seem to belong to two distinct groups of countries with respect to the size of the gender unemployment gap. The authors conclude that the differences between the two countries are the results of divergent economic structures and institutions in operation. The unexplained part of the differential, usually referred to as discrimination, is larger than the explained part in both countries, but it turns out larger for the UK. The explanation preferred is that the unexplained part is probably overestimated due to the multiple signals in the more flexible UK labour market (e.g. more frequent turnover), which cannot be accounted for by the standard human capital variables included in the analysis.

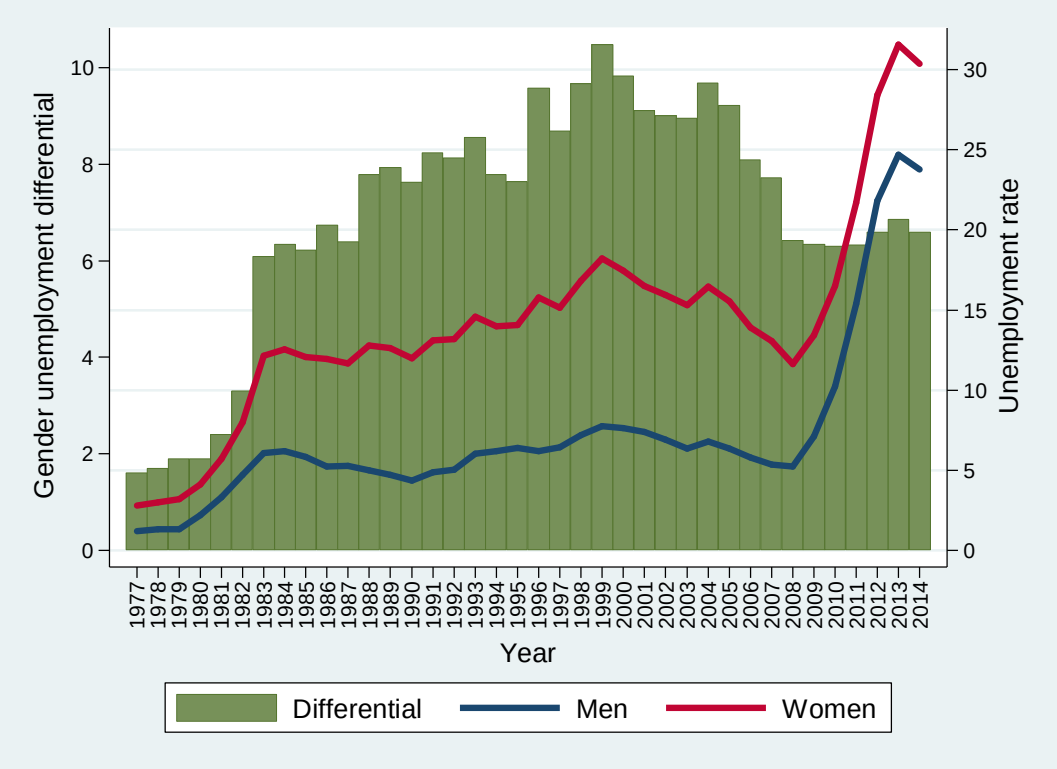
The basic conclusion drawn from the literature is that there are gender unemployment gaps around the world, but with significant variation in their size. The primary reasons for their existence involve different flows between labour market states, mainly from unemployment to employment, institutional factors which vary between countries and, of course, personal characteristics and social attitudes towards women's market employment. An interesting aspect of gender differences, which seems to emerge from the literature, is that countries with larger unemployment differentials tend to have smaller wage gaps (Azmat et al., 2006; Petrongolo, 2004). This could mean that unemployment gaps mask wage gaps between men and women or, put differently, in countries with low unemployment gaps women are penalised by being less well compensated. Furthermore, it seems that women are discriminated against, no matter what the causes of it are and no matter what the actual realisation of it is, i.e. lower probability of getting a job or getting paid less than men.

3. The case of Greece

The unemployment rates by gender since 1977 are presented in Graph 1. It should be noted that, contrary to what is observed elsewhere, female unemployment rate in Greece has been always higher than male. Even at times when women's labour force participation was very low, women had more difficulty getting a job compared with men. In the 1980s the gap started to widen along with the unemployment rates for both sexes. In particular, the gender unemployment gap went from 1.6 percentage points (pp) in 1977 to 6.1pp in 1983, thus it increased approximately four times. This seems like a very big increase for such a short period of time (six years). Nevertheless, the actual change might be overestimated due to change in data collection methodology. The unemployment gap took its maximum value at the end of the 1990s and it continues to drop ever since. Even during the ongoing economic depression and the resulting high unemployment rates, the unemployment gap remains considerably smaller than its historical high. A simple correlation coefficient reveals

a significant positive correlation between the unemployment gap and the unemployment rates, i.e. the higher the unemployment rates the larger the gap, but the gap seems to be more strongly attached to women's unemployment rate (0.68) than men's (0.31). Finally, during the current depression, and based on the evolution of the unemployment rates, it seems that both genders have been affected similarly by the crisis, contrary to what the evidence shows for the USA.[5]

Graph 1. Unemployment rates (in %, right axis) and gender unemployment differential (in percentage points, left axis) in Greece, 1977-2014



Source: OECD.
Notes: Data prior to 1983 are collected using the Datastream.

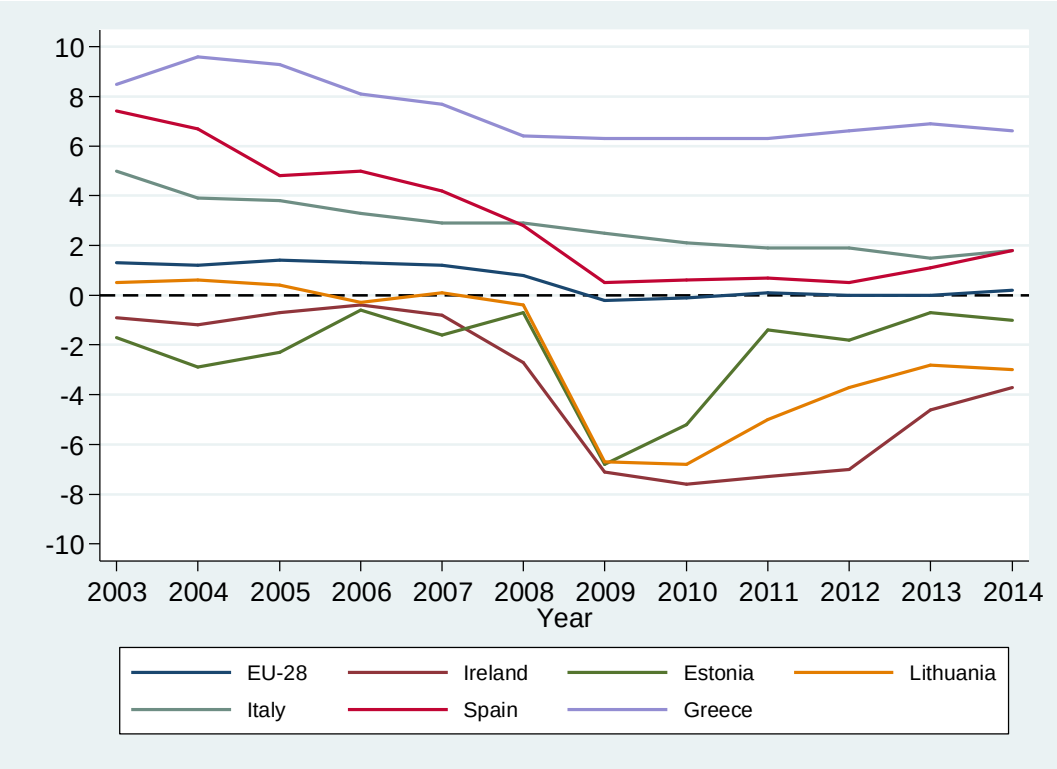
Eurostat's database, regarding unemployment rates, reveals that the gender unemployment differential is substantially higher in Greece compared with every other European Union member-state. More specifically, Graph 2 depicts the average gender unemployment differentials for the European Union of 28 member-states (EU-28), as well as that for the three countries with the highest negative unemployment differentials over period 2003-2014 (males face higher unemployment rates) and the three countries with the highest positive unemployment differentials.

Not surprisingly, at the European level the gender unemployment differential fluctuates around zero, which means that in the EU unemployment rates are on average the same for

[5] It should be noted though, that if the number of unemployed is taken under consideration then it becomes clear that men face greater unemployment risk: between 2008Q3 and 2014Q3 unemployed men increased by 4.4 times, while unemployed women increased by 2.8 times.

men and women. A closer look at each country separately, though, reveals that gender unemployment differentials also exist in other countries. In some countries there is a negative and worth mentioning unemployment differential, e.g. Ireland, Estonia and Lithuania, while in some other countries there is a positive and sizeable unemployment differential, e.g. Italy, Spain and, as expected, Greece.

Graph2. Gender unemployment differentials (in percentage points), 2003-2014



Source: Eurostat.

There are two characteristics which distinguish the Greek case from the rest. The first one is that the gender unemployment differential is persistently the largest amongst European Union member-states throughout the period presented in Graph 2, i.e. 2003-2014. During the last decade, which for the majority of EU countries includes a complete business cycle, the average gender unemployment differential in Greece was 7.5pp, when the second larger (in absolute value) is found in Ireland (-3.7pp), but in favour of women, and the third larger is found in Spain (3.1pp), a country with the highest average unemployment rate (15.5%) amongst EU-28 member-states[6]. A simple correlation coefficient between unemployment rates (men and women in total) and gender unemployment differential during this last decade shows that there is a positive, but low, correlation of 0.25. Therefore, Greece's high unemployment rates cannot be held solely responsible for its high gender unemployment differential.

[6] Note that Greece ranks third in this listing with an average unemployment rate of 13.5%, between Slovakia (14.1%) and Croatia (12.8%).

A second point is that the Greek gender unemployment differential declined significantly during the years between 2003 and 2008 (-2.1pp), a decline which was the third largest in EU-28 (following Spain and Malta), and then increased marginally (0.6pp). Unemployment differentials followed the same pattern more or less in most countries with a sizable gender unemployment differential, either positive or negative. It is interesting to note that the change in the gender unemployment differential during the recession (of varied intensity across European countries) was much more pronounced in countries with negative gender unemployment differentials. This means that in those countries the unemployment differential actually declined during the recession, while in Greece and several other countries recording higher positive differences, the differential increased slightly. This should come as no surprise. As was already mentioned, the unemployment gap exhibits an upward trend during recessionary times also in the USA (see Albanesi and Şahin, 2013 or Johnson, 1983). Either a negative unemployment gap decreases or a positive unemployment gap increases, a probable, but not exhaustive, explanation could be that women tend to suffer more from the recession compared with men, partly due to a weaker labour market attachment and partly due to employers preferences and social norms, i.e. males are often considered the main bread winners and up to a point they seem better protected against unemployment.

4. Methodology and data

The aforementioned wide differences in the unemployment rates between men and women in Greece challenge an explanation. The reasons behind such a phenomenon are not straightforward, but in any case they can be classified into two main categories: a) differences in the characteristics of males and females and b) differences in how individual characteristics are rewarded by potential employers.[7]

The first broad category may stem from differences between men's and women's observed characteristics. For instance, one may have a higher propensity to be unemployed due to lower educational qualifications or because (s)he might have few years of work experience. Factors commonly considered include personal characteristics such as age, highest level of education attained, family status and position in the household, i.e. head, spouse, etc., as well as ethnicity. Moreover, household's characteristics are usually considered, as they may affect the decision to accept/reject a job offer, especially for women. It is also customary to include the degree of urbanization of the area where the household resides, since it could affect the type of jobs available. Moreover, variables capturing the household's composition

[7] Some differences between men and women are difficult to observe. Differences in unobservable characteristics, which will affect the unemployment propensity of individuals, might reflect individualities that are inherently different between genders. Characteristics related to personality are such examples. For instance, women tend to have a less aggressive and provocative behaviour. On the other hand, such unobservable characteristics might reflect variations in the effort men and women put into searching for a job or the compromises they are willing to do in order to get it. Because all the estimated models for cross sectional data have a good fit (pseudo R-square is always higher than 50%), we believe that the unobservable characteristics have a small effect on our results.

are also included in the analysis. The number of employed and unemployed individuals in the household, as well as the number of dependent members present, is pieces of information potentially valuable, since they could affect an individual's decision to accept/reject a job offer. Finally, a set of variables reflecting individual's labour market status one year ago is also included, i.e. whether the individual was inactive, unemployed or employed and, if so, in which industry (s)he was employed. The benefit from this information is twofold. Previous labour market status may act as a signal for potential employers. For instance, between two individuals ceteris paribus a spell of unemployment might act as a low productivity signal and be a deterrent factor to hire this person. Moreover, the models employed in our analysis basically focus on the supply side of the labour market. The inclusion of information regarding the industry an individual was employed one year ago also provides information for the demand side of the labour market. This is particularly interesting in the case of Greece, since during the economic crisis certain industries, many of them male-dominated, suffered more from the economic downturn.

The second broad category, differences in how individual characteristics are rewarded by potential employers, can be the result of social norms or discrimination, among others. A possible issue is that these might reflect characteristics of the potential employers, information for whom is not available in our data. Fortunately, our sample spans for eleven years and includes over 1 million observations mitigating the problem of unobservable employers' characteristics. The great number of observations, as well as the good fit of our models, suggest that any difference other than observed characteristics can be rather safely attributed to employers discriminating against women.

To break down the differences of the probability of unemployment between men and women in Greece into differences due to observable characteristics or their reward, an extension of the Oaxaca (1973) and Blinder (1973) decomposition for linear models is used as developed by Yun (2004). In particular, we start by estimating probit equations for the probability of unemployment by gender and apply the following decomposition:

$$\begin{aligned} &\Pr(U_f = 1) - \Pr(U_m = 1) = \overline{\Phi\left(X_f \beta_f\right)} - \overline{\Phi\left(X_m \beta_m\right)} \\ &= \underbrace{\left\{\overline{\Phi\left(X_f \beta_f\right)} - \overline{\Phi\left(X_m \beta_f\right)}\right\}}_{E} + \underbrace{\left\{\overline{\Phi\left(X_m \beta_f\right)} - \overline{\Phi\left(X_m \beta_m\right)}\right\}}_{C} \end{aligned} \tag{1}$$

where the subscripts *f* and *m* indicate female and male respectively, *U* is their probability of unemployment, while *X* and *β* are vectors of observable characteristics and their estimated coefficients and Φ is the standard normal cumulative distribution function. The first component indicated *E* refers to the part, which can be attributed to differences due to characteristics or endowments and it is customary referred to as the explained part. The second component labelled *C* involves differences in coefficients and is usually called the unexplained part.

This decomposition can be further disaggregated to identify the contribution of each predictor to each component. We partition *E* and *C* into detailed components, which represent the effect of the k^{th} covariate to *E* and *C*, by constructing for and attributing

weights to each covariate following Even and Macpherson (1993), Nielsen (1998) and Yun (2004). The weighted sum of each covariate will constitute the overall component as follows:

$$\Pr(U_f = 1) - \Pr(U_m = 1) = E + C = \sum_{k=1}^{K} W_{\Delta x}^{k} E + \sum_{k=1}^{K} W_{\Delta \beta}^{k} C \tag{2}$$

The weights are obtained from a first order Taylor linearization of $X_f\beta_f$ and $X_m\beta_m$ and are insensitive to the problem of path dependence, i.e. the sequential substitution of each group's variable with that of the other.[8] The weights can be easily constructed by using the average values of the characteristics and their estimated coefficients. In particular the weight for the explained (*E*) component is defined as

$$W_{\Delta x}^{k} = \frac{\beta_f^k \left(\overline{X_f^k} - \overline{X_m^k} \right)}{\sum_{k=1}^{K} \beta_f^k \left(\overline{X_f^k} - \overline{X_m^k} \right)} \tag{3}$$

while for the unexplained (C) component is defined as

$$W_{\Delta \beta}^{k} = \frac{\overline{X_f^k} \left(\beta_f^k - \beta_m^k \right)}{\sum_{k=1}^{K} \overline{X_f^k} \left(\beta_f^k - \beta_m^k \right)} \tag{4}$$

and

$$W_{\Delta x}^{k} = W_{\Delta \beta}^{k} = 1 \tag{5}$$

Finally, it is worth mentioning that the detailed decomposition is sensitive to the choice of the reference category when sets of dummy variables are used (Oaxaca and Ransom 1999). This means that when a set of dummy variables is included in the used models, results will differ depending on the reference group chosen. For example, in the case of education, results will vary if the reference group is lower education as opposed to higher education. To overcome this issue we utilize the approach suggested by Yun (2005). The idea is to transform/normalize the estimates of the probit equation in such a way that the intercept and the coefficients of all dummy variables, including the reference group, are included in the regression. This is equivalent to averaging the coefficients' effects of a set of dummy variables, while permuting the reference group. However, the former is much easier to implement, since it involves estimating a single equation.

The data used are from the Greek Labour Force Survey (LFS). Since 1998 LFS are conducted on a quarterly basis (previously they run only in the second quarter of each year) by the Hellenic Statistical Authority (ELSTAT). The main purpose of this sampling survey is to collect detailed data on the employment and unemployment status of household members aged 15

[8] An alternative approach to the path dependence problem has been proposed by Fairlie (2005) and involves a repeated matching procedure between the two groups.

or over. The number of households participating in the survey is 30,000 per quarter. The data used for the purposes of this study are drawn from the LFS and span from 2004q1 to 2014q4, excluding years 2008 and 2009, because during these eight quarters, on the one hand, the economy attained historically low unemployment rates (lowest in 2008q3: 4.7% for men and 10.8% for women), and, on the other hand, it is not clear whether the early symptoms of the recession had already begun to appear. Thus, with a view to ensuring clearly defined samples "before the recession" and "during the recession", the former includes observations between 2004q1 and 2007q4, and the latter between 2010q1 and 2014q4. Moreover, we restrict our sample to individuals aged between 15 and 64. Table 1 summarizes selected key variables by gender. Differences between men and women become quickly apparent. Women have a lower participation rate and a much higher unemployment rate. Moreover, they are somewhat younger than men, but more educated, and they are more likely to be either unemployed or inactive a year ago. Furthermore, women are slightly more likely to be married and live in large cities, while a smaller share of women are immigrants. Last but not least, women live in households with slightly more members employed, but the number of unemployed and dependents in the household does not seem to differ by gender.

Table 1. Variable means by gender

	Male	Female
Participation rate	77.29	55.07
Unemployed	10.88	18.61
Age	41.32 (11.54)	40.13 (11.07)
Primary education or less	23.93	21.32
Lower secondary	14.05	9.22
Upper secondary	35.23	32.02
Metalykeiako (Post- secondary non tertiary)	7.79	10.96
ATEI (Higher Technical Institute)	5.10	7.46
AEI (University)	12.25	17.36
Postgraduate (Master or/and PhD)	1.64	1.66
Working one year ago	88.36	79.93
Unemployed one year ago	9.33	15.52
Inactive one year ago	2.32	4.55
Married	62.71	64.85
Urban	57.81	60.99
Immigrant	8.03	7.09
Number of other employed in the household	0.81 (0.85)	0.96 (0.78)
Number of other unemployed in the household	0.17 (0.46)	0.16 (0.45)
Number of dependent individuals in the household	0.46 (0.79)	0.43 (0.76)
Number of observations	723,608	537,339

Source: 2004q1-2014q4 LFS survey data, ELSTAT.

Notes: Statistics estimated on final estimation sample. Standard deviation in parentheses.

5. Results

5.1. Determinants of unemployment probability

The first step is to estimate the probability of unemployment and determine the impact of variables included in the regression, i.e. marginal effects, which represent human capital, social and demographic characteristics. The results are reported in the web Appendix (Tables A1, A2 and A3). It is worth noting that being employed a year ago decreases the probability of unemployment for women more than men, while the opposite holds when being unemployed. This indicates that male unemployment is more state dependent compared with female unemployment, while the reverse holds regarding employment, and this has not changed during the recession. Nevertheless, during the recession the negative impact of being employed a year ago on being currently unemployed increased for both genders. Thus, having a job has operated as a shield against unemployment during the recession, especially for women. The opposite is true for being unemployed a year ago, which seems to increase the probability of being currently unemployed less during the recession. One possible explanation could be that being unemployed mattered more before the recession, since it was used as a signal by potential employers: being fired is different than becoming unemployed because the firm closed.

Furthermore, the effect of educational attainment is the expected one: lower levels of education increase the probability of unemployment (with respect to the reference group: upper secondary), while tertiary education decreases the probability of unemployment, but considerably more for women. Women's advantage seems to increase with education, although it is difficult to rationalise its existence in the first place. Moreover, education turns out much more important during the recession for both men and women, while higher levels of education continue to have a bigger negative impact on the unemployment probability of women. Perhaps, this is the outcome of some kind of a selection process during the recession according to which employers substitute less for more educated individuals who are willing to work more hours and/or for lower wages, in order to keep their jobs. On the other hand, it could be the result of a more rationalised screening process during the recession according to which employers hire more educated individuals because they consider them to be more productive.

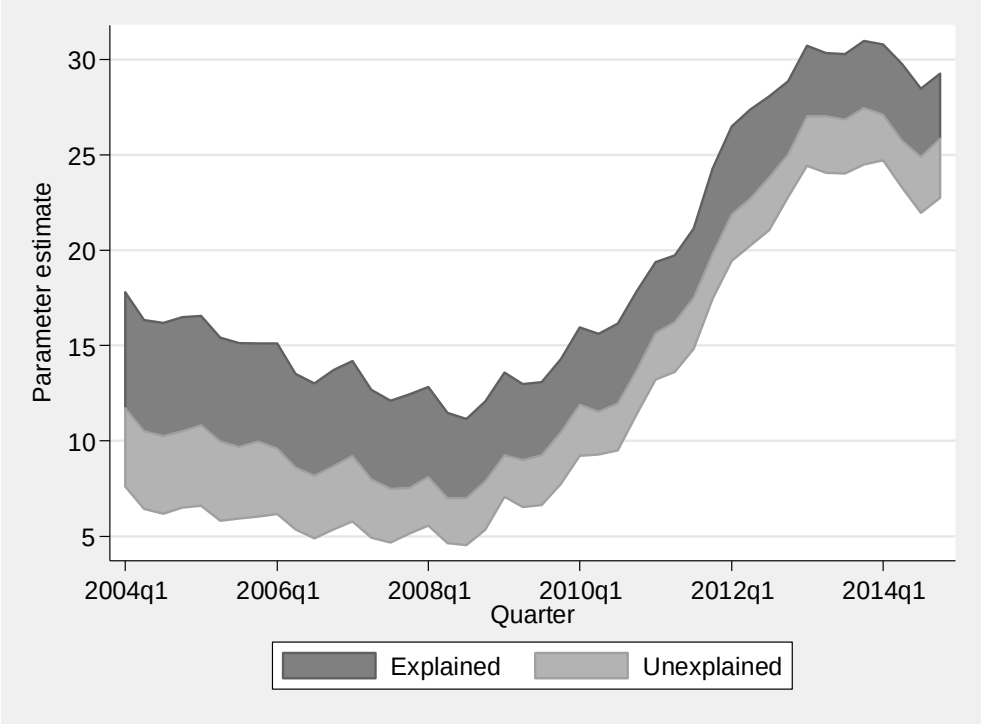
Interestingly, being an immigrant increases the probability of unemployment for males, but not for females. Breaking down the sample to before and during the recession shows that ethnicity becomes significant during the recession. This should come as no surprise, since despite the fact that the recession had a significantly negative effect on specific industries, which employ primarily male immigrants, the jobs performed by natives differed from those performed by immigrants. For example, in the case of the "Constructions" industry, natives are often civil engineers and architects. Another characteristic which seems to be affected by the recession is the effect of marriage, since it has no statistically significant effect on the unemployment probability of women before the recession, but it becomes important during the recession. One plausible explanation is that married women are more willing to work during the recession in order to support family income, so they tend to accept jobs they previously turned down or accept deteriorating working arrangements. The fact that marriage reduces the probability of unemployment in general is well documented in the

literature and it is attributed to the lower elasticity of labour supply on behalf of married men and women, i.e. due to family obligations they are less likely to quit, thus more reliable and susceptible to wage cuts or longer working hours. Finally, the number of employed in the household decreases the probability of unemployment for both genders implying the existence of some sort of assortative mating.

5.2. Gender unemployment gap decomposition

Next, we turn to the main task of this paper which is to disentangle the gender unemployment differential. Given the aforementioned analysis, it becomes straightforward that the impact of some characteristics on individual's unemployment probability varies by gender. The question we try to address is how big the part of the gender unemployment gap these differences can explain. Graphs 3 and 4 represent the evolution of the estimated unemployment gap between men and women for each quarter, based on equation 1.2. Graph 3 gives a first look at the evolution of both the explained and the unexplained part of the estimated gender unemployment gap. Estimations were run separately for each quarter. The estimated unemployment rate for women is always higher than that for men and there is a downward trend evident until 2008, in accordance with the raw data. Since 2008, when unemployment started to increase for both genders, the gap seems to have narrowed considerably up to mid 2011 and then it stabilised, despite the increase in unemployment rates for both men and women. The quarterly changes in the unemployment gap are probably the result of seasonal changes in the labour market and the segregation of men and women in industries and occupations that aggravate them.

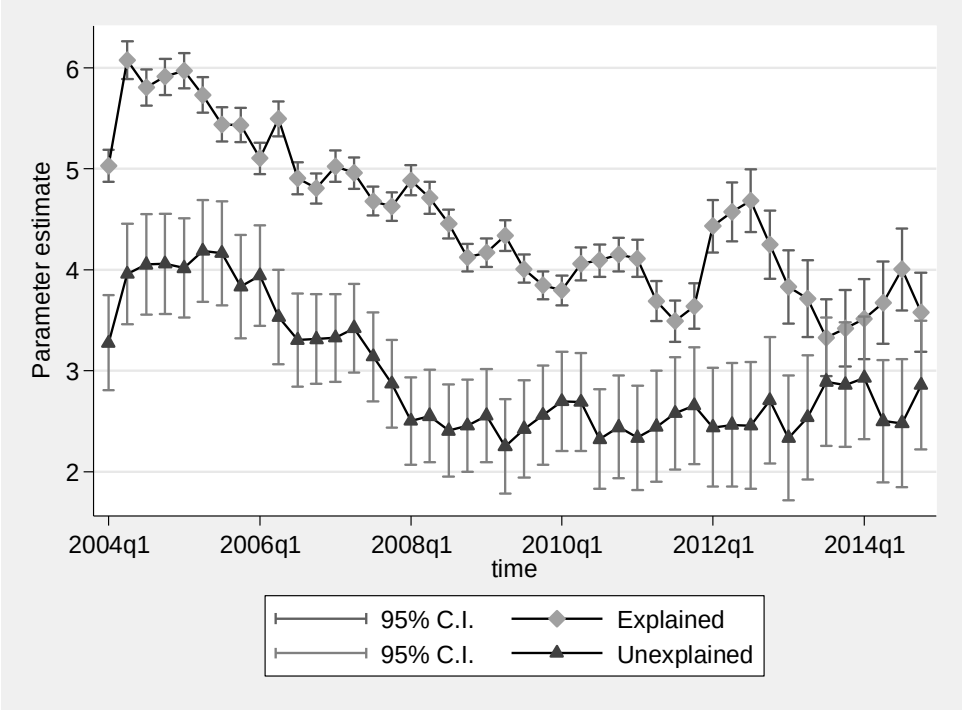
Graph 3. Inter-temporal evolution of the gender unemployment gap



Source: 2004q1-2014q4 LFS survey data, ELSTAT.

Graph 4 depicts the inter-temporal evolution of the two components of the unemployment gap using an exponential moving average to smooth seasonal discrepancies. The explained part of the unemployment gap is always greater than the unexplained part, which means that unemployment differences between men and women can largely be interpreted by the different set of human capital and personal characteristics embodied by the two groups throughout the entire period, rather than some unknown factors. Moreover, the two components decrease continuously, which is expected, given the decrease in the overall unemployment gap over the past years. What is more, the explained part of the gap has a much smaller confidence interval, which means that it is considerably more stable compared with the unexplained part. Again, this is expected given the nature of the two components, i.e. the explained component reflects differences in average observed individual characteristics which do not change drastically over time. Finally, it is interesting to point out that the explained part of the gap exhibits an unprecedented variability since 2011, perhaps due to larger flows of heterogeneous groups of individuals in and out of the labour force as a reaction to the crisis. On the other hand, no such pattern is recorded regarding the unexplained part of the gap. As a consequence, the convergence, which is evident over the last few quarters, should not be blown out of proportion.

Graph 4. Inter-temporal evolution of the gender unemployment gap components



Source: 2004q1-2014q4 LFS survey data, ELSTAT.

Following the graphic presentation, Table 2 reports the estimated unemployment gap between men and women for the entire period considered and the two sub-periods chosen, i.e. before (2004q1-2007q4) and during (2010q1-2014q4) the recession. It is evident from the first column that women record, on average, a 7.7 percentage points higher

unemployment rate over the examined period. The next two columns, though, reveal that such an approach masks considerable differences between the two sub-periods. Thus, in addition to the fact that during the recession unemployment rates increased considerably for both men and women, the unemployment gap narrowed from 8.9 percentage points before the recession to 6.6 percentage points during the recession. This can be explained by the fact that the male unemployment rate increased much faster than the corresponding female, presumably because of recession's harder impact on industries employing mostly males, as already mentioned.

Regarding the decomposition of the unemployment gap, the explained part for the whole examined period accounts for most of it (5.4 percentage points out of 7.7, or 70.1%). During the recession in absolute terms both the explained and the unexplained components decreased almost the same, however in relative terms the reduction was more pronounced for the latter[9]. As a result, the share of the explained gender unemployment gap increased to 66.7% during the crisis, from 62.9% before, while the unexplained gap decreased to 2.2 percentage points on average, half of the explained component. The lower share of the unexplained component in the overall gender unemployment gap is also reflected by the fact that its range is reduced by almost half. Furthermore, its maximum value during the crisis is very close to its lowest for the period before the crisis. These changes in the unexplained part mean that the recession probably triggered some sort of rationalisation of the labour market, which resulted in women being less discriminated against. Regarding changes in the explained part, it could be that the influx of women in the labour market, in order to support family income, coupled with retirement flows of both men and women made participants in the labour market more homogeneous with respect to their human capital endowments.

Table 2. Estimated unemployment rates by gender and aggregate gender unemployment gap decomposition

	2004q1-2014q4	2004q1-2007q4	2010q1-2014q4	Percentage change
Unemployment rate				
Women	18.6***	14.8***	24.6***	66.2%
Men	10.9***	5.9***	18.0***	205.1%
Differential	7.7***	8.9***	6.6***	-25.8%
	[6.1 ; 10.2]	[7.3 ; 10.2]	[6.1 ; 7.2]	
Explained	5.4***	5.6***	4.4***	-21.4%
	(70.1%)	(62.9%)	(66.7%)	
	[3.3 ; 6.1]	[4.6 ; 6.0]	[3.5 ; 5.3]	
Unexplained	2.3***	3.3***	2.2***	-33.3%
	(29.9%)	(37.1%)	(33.3%)	
	[2.2 ; 4.2]	[2.4 ; 4.3]	[1.7 ; 2.6]	

Notes: Percentage contribution relative to total differential in parenthesis. Range in square brackets across quarters.
*** Statistically significant at the 1% level.

[9] Remember that this refers to the average of period 2010q1-2014q4 and, hence, it should not be confused with Graph 4.

Moreover, it would be interesting to investigate in which direction and how much each individual characteristic contributes to the explained and the unexplained components. Graph 5 depicts the results of the detailed decomposition in which similar variables, e.g. levels of education, are grouped together to produce an aggregate effect.[10]

Starting from the explained component it is worth noting that with the exception of education, marital status and household composition, gender differences in all other examined variables increase the explained component of the differential. It is clear that the main driving force behind gender unemployment differential is previous labour market status, since this is probably used as a signal by employers, but also reveals the low mobility that the Greek labour market exhibits, probably due to high legislative protection, at least before the crisis occurred. In particular, being employed one year ago on average, over the whole period, contributes to the overall explained component by 35.1%, being unemployed by 18.1%, and being out of the labour market by 2.6%. The effect of all these tend to increase the unemployment gap more during the recession. Interestingly differences in a person's role within the household, e.g. being a household head, have a high positive contribution to the explained component (20.8%), especially before the recession (31.5% before vs. 24.2% during the recession). This could be interpreted by the changes in the composition of the female workforce due to increased female participation rates during the recession.[11] A positive but small contribution to the explained component of the unemployment gap stems from age and urbanity (1.3% for both). On the other hand, educational differences in characteristics tend to decrease the unemployment gap, which is expected given the higher level of women's education and the lower unemployment rates associated with higher levels of education, ceteris paribus. Interestingly, the effect of education is significantly stronger during the recession. This could be a cohort result as younger women are more educated than older workers, who retire, and younger men.[12] Moreover, during the crisis qualifications matter more in the hiring process. Differences in marital status and ethnicity tend to decrease the explained unemployment gap during the recession by -1.5% in both cases.

Comparing the explained with the unexplained component's composition, certain similarities could be noted. For instance, gender differences in the evaluation of being employed a year ago are important in shaping the unexplained component of the unemployment gap considerably, just as differences in the variable itself are, but with the opposite sign. Previous unemployment increases the gap, only during the recession, but its contribution is considerably lower. Similarly, inactivity a year ago has a positive contribution to the overall gap, which declines during the recession. Age seems to play a crucial role in the unexplained component of the unemployment gap (92.2%), which is further amplified during the recession. This means that employers seem to treat differently men and women

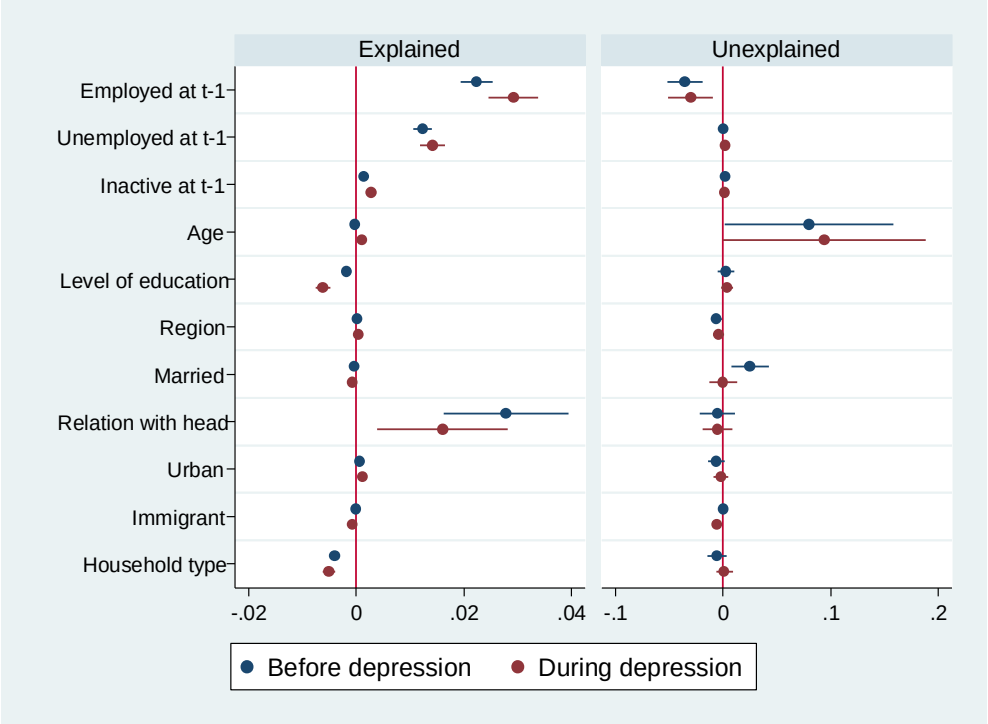
[10] Detailed results, by variable, are presented in Table A4 of the web Appendix.

[11] LFS data show that the participation rate for females increased during the recession (2008q1: 42.6% vs. 2014q4: 44.2%), while male participation rate decreased (2008q1: 64% vs. 2014q4: 60.2%).

[12] The reader should bear in mind that the educational gap is in favour of men with respect to older individuals, i.e. older cohorts of men are more educated than women, while the reverse is true for younger cohorts.

of the same age, something that could be related to views about women's obligations at home or their weaker attachment to the labour market and potential employment spells. Perhaps for the same reasons, the unexplained component also increases by 10.4% for married individuals. It is worth noting that region of residence seems to equally decrease the unexplained component, both before and during the recession, but its effect is statistically significant only before the recession. During the recession, the possibly discriminatory treatment of male and female immigrants decreases the unemployment gap. As shown in the regression results, this effect comes from a statistically significant coefficient only for males,, which means that the immigration status matters only for men, probably due to occupational segregation and the asymmetrical impact of the recession.

Graph 5. Detailed decomposition of the gender unemployment gap



Notes: Employed t-1 = employed 1 year ago, Unemployed t-1 = unemployed 1 year ago, Inactive t-1 = inactive 1 year ago, Married = marital status, Relation = relationship with head of household, Urbanity = leaving in a more or less urban area, Family = employment status of other household members.

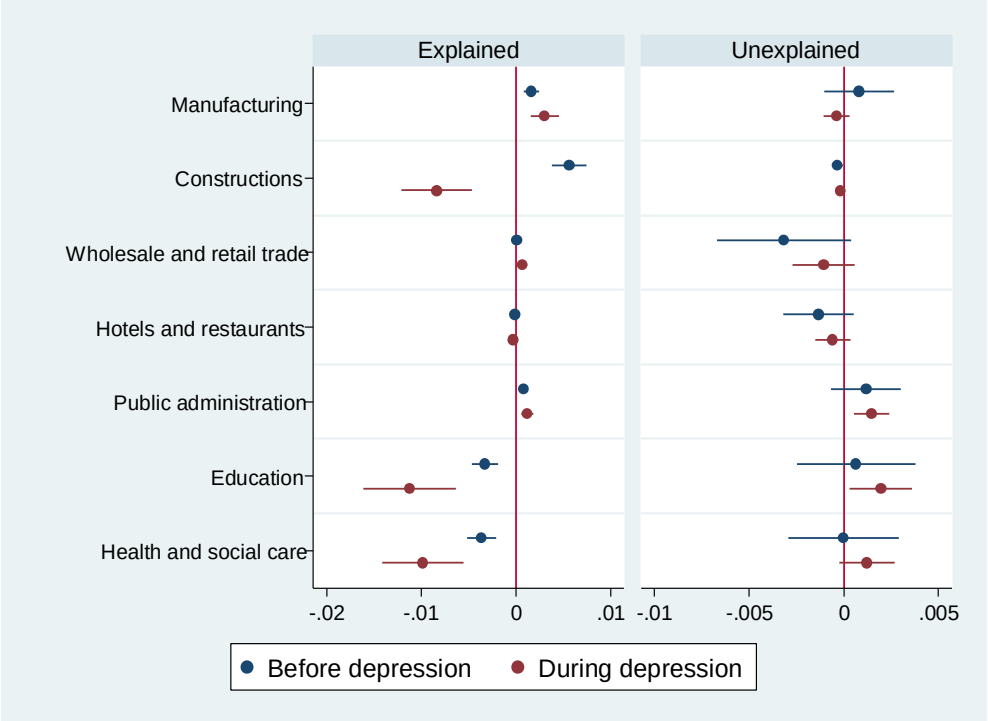
As already mentioned, being employed one year ago has the stronger impact on the unemployment gap. In particular, it increases the explained component of the gap and decreases its unexplained. Since the beginning of the recession, a major restructuring in the composition of industrial employment has taken place. During the recession large industries, which were considered the locomotive of the economy, several of them male-dominated, disappeared or shrank. As a result, male unemployment rate grew faster than female unemployment rate and consequently the unemployment gap over time reduced. In this context, it is interesting to look at how selected main branches affected the unemployment gap and its components. In particular, Graph 6 depicts the contribution to the explained and unexplained component of seven key industries. Four of them mainly concern the private

sector (manufacturing, constructions, retail and wholesale trade, hotels and restaurants) while three generally relate to the public sector (public administration, education, health and social care).

Interestingly, regarding the explained component, the industry with the highest positive effect on the gap before the crisis was constructions. However, during the recession constructions appear to reduce the gap, as firms' turnover shrank creating a lot of unemployed, predominantly men. The effect of manufacturing and trade was positive before the crisis and increased during the recession, while tourism seems to have a relatively small effect. With the exception of public administration, which includes those working on defense, all industries where the main employer is the State appear to reduce the explained component of the gap. Of course, we should not forget that these industries employ mainly women. However, it is interesting that during the crisis, specific industries reduce the gap even more, probably because employment was retained in these industries.

Regarding the unexplained component, it records smaller values than the explained component. It is interesting that, during the recession, the contribution of private sector industries to the gender unemployment gap tends towards zero, reinforcing the previous finding that the crisis triggered a rationalisation process of the labour market. While the industries of the public sector before the recession did not have an effect on the differential, during the recession the industry of public administration, which includes defence, not surprisingly increases the gap. Curiously the same is observed in education, perhaps due to the fact that they employ more women via temporary work contracts, e.g. substitute teachers, which decreased under the fiscal consolidation process adopted.

Graph 6. Detailed decomposition of the gender unemployment gap by industry of employment one year ago (selected variables)



All in all, the results show that the explained component of the unemployment gap is larger and remained stable during the recession, but due to the significant decrease of the unexplained component, its relative importance (share) increased. This could be interpreted as a rationalisation of the labour market regarding gender, i.e. women are treated more equally than before compared with men. Labour market status a year prior to the survey turns out to be an important determinant of the unemployment gap, especially regarding the explained component, but there are significant differences regarding the industry of previous employment. Gender differences in labour market rewards of observed characteristics are not statistically significant for most variables and that is more pronounced during the recession. It should come as no surprise given the decrease of the unexplained component of the unemployment gap during the recession.

5.3. Gender unemployment gap and labour market institutions

From the results so far one can conclude that several changes took place during the recession both regarding the characteristics of the labour force and the treatment of those characteristics by the labour market, i.e. the employers, while the former seem to matter more in the shaping of the unemployment gap. Nevertheless, a valid question is whether the extensive institutional changes that also took place during the recession, particularly in 2011 – 2012, contributed to those changes.

In order the get a quick answer, Table 3 presents the correlation coefficient between the gender unemployment gap and a number of selected institutional variables from OECD and various segregation measures calculated using the LFS.[13] Policy makers could concentrate on variables that are positively correlated with the unemployment gap and come up with ways to mitigate their effect, as long as the unemployment gap is considered undesirable. This does not imply that, for instance, trade unions should be banned, but rather it means that their actual activity should be examined and perhaps revised, i.e. encourage the participation of more women in trade unions. In other cases, for example regarding low pay incidence or the gender wage gap, maybe it would be wise to take measures aiming at decreasing such incidences. On the other hand, policy makers could find ways to reinforce variables that are negatively correlated with the unemployment gap, such as average annual wages or annual minimum wages, but that means that the loss of competitiveness coming from increased labour cost would have to be compensated by other measures, e.g. lower social security contributions or a decrease in non-wage cost, such as the tax on fuels. Even though the negative correlation between minimum wages and the unemployment gap may stem from the fact that many men get paid around the minimum wage and increasing it will increase male unemployment. It is also interesting that the unemployment gap is positively correlated with all indices used to measure inequality in Greece. This reflects the adverse effects of unemployment in an economy. If unemployment is reduced, inequality will probably also fall.

[13] Results for more variables are available from the authors upon request.

Table 3. Correlation coefficient for gender unemployment gap and 'institutions'

	Differential	Explained	Unexplained
Trade Union Density	0.718**	0.705**	0.713**
Discouraged workers women	-0.632**	-0.711**	-0.488
Incidence of marginally attached workers women	-0.651**	-0.741***	-0.478
Average annual wages current prices	-0.486	-0.318	-0.660**
Minimum wages at current prices in NCU	-0.592*	-0.47	-0.696**
Inequality			
Decile 5/Decile 1	0.836***	0.772***	0.850***
Decile 9/Decile 1	0.627*	0.629*	0.576*
Decile 9/Decile 5	0.193	0.252	0.106
Low Pay Incidence	0.895***	0.845***	0.887***
Gender wage gap	0.724**	0.603*	0.816***
Strictness of employment protection			
Individual dismissals	0.51	0.596*	0.367
Temporary contracts	0.467	0.544	0.336
Segregation Measures			
Dissimilarity	0.629**	0.721**	0.455
Karmel-MacLachlan	0.577*	0.678**	0.397
GE(50)	0.595*	0.687**	0.426
Hutchens	0.595*	0.687**	0.426
A(50)	0.594*	0.686**	0.425
Mutual Information	0.560*	0.657**	0.387
Gini	0.601*	0.689**	0.434

Notes: Data on institutions are from OECD database. Segregation measures were calculated from LFS. All correlation coefficients refer to annual data. The number of observations is 9 for OECD data and 11 for the segregation measures.
* p-Value<0.10, ** p-Value<0.05, *** p-value<0.01.

Other variables, such as the frequency of discouraged female workers or those marginally attached to the labour market need to be further investigated, since the results lead to no straightforward conclusion, apart from the fact that these two types of women are probably low skilled and, therefore, it is harder for them to get a job, especially during the recession when excessive highly skilled labour force is available[14]. Moreover, strictness of employment protection, which was relaxed during the recession, seems to be positively correlated with the explained component of the unemployment gap. This observation implies that the flexibility of the labour market could potentially lead to a lower gender unemployment gap. The obvious question is by which means women would become more attractive compared with men. Perhaps part of the hiring discrimination turns to wage discrimination or it might be that firms find it easier to hire, if it is easier to fire. In any case, the aim should be to reduce female unemployment rate rather than to increase the corresponding male. Finally, it is worth noting that all segregation indices are positively correlated with the overall

[14] Therefore, the "weakest" group of women looking for a job withdraws from the sample leaving the rest with better chances to find one.

unemployment gap and its explained component. To the extent that women are mainly employed in industries which face higher unemployment rates, either cyclical (retail trade) or seasonal (tourism, private education, etc.), the overall gender unemployment gap is expected to rise.

6. Conclusions

This paper examines the gender unemployment gap in Greece using Quarterly Labour Force Surveys data. It adopts a comparative approach with respect to the years prior to the recession (2004-2007) and the years during the recession (2010-2014), in order to better understand the mechanisms shaping the unemployment gap and their evolution during the recession. Given that Greece is traditionally characterised by a large gender unemployment gap compared with almost every other European country, tracing the determining factors behind it is an interesting task itself.

The results show that the explained component of the unemployment gap is larger and relatively stable during the recession, but due to the significant decrease of the unexplained component, its relative importance, as reflected in its percentage contribution, increased during the recession. This could be interpreted as a rationalisation of the labour market in favour of women or that the influx of women, in order to support family income, changed the endowments of the pool of women in the labour force. Labour market status a year prior to the survey turns out to be an important determinant of the unemployment gap, especially regarding the explained component, which signals a strong state dependence. However, significant differences exist regarding the industry of employment one year ago, as specific male-dominated industries suffer more from the recession increasing male unemployment rate and reducing the overall gap. On the other hand, most differences in coefficients are not statistically significant. This should come as no surprise given the decrease of the unexplained component of the unemployment gap during the recession.

Finally, efforts to connect the gender unemployment gap and its components with various variables describing the Greek labour market and the institutions operating within it, reveal that there are strong relationships either negative or positive, but these relationships need to be carefully examined before specific actions are implemented. Further work could include more research on the channels through which these variables influence the unemployment gap, their causal relation and a wider comparison between Greece and other countries, in order to establish differences and similarities of those relationships across countries.

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Appendix

Table A1. Probability of unemployed, 2004-2014

	All		Men		Women	
	Coefficients	Marginal effects	Coefficients	Marginal effects	Coefficients	Marginal effects
Employed one year ago	-2.090***	-0.518***	-1.898***	-0.423***	-2.227***	-0.593***
	(0.014)	(0.005)	(0.023)	(0.008)	(0.018)	(0.006)
Unemployed one year ago	0.547***	0.190***	0.639***	0.231***	0.486***	0.157***
	(0.014)	(0.005)	(0.023)	(0.008)	(0.019)	(0.006)
Female	0.211***	0.021***				
	(0.010)	(0.001)				
Age	0.030***	-0.000***	0.015***	0.000	0.047***	-0.000***
	(0.003)	(0.000)	(0.003)	(0.000)	(0.004)	(0.000)
Age^2	-0.000***		-0.000***		-0.001***	
	(0.000)		(0.000)		(0.000)	
Primary or less	0.111***	0.011***	0.154***	0.014***	0.054***	0.006***
	(0.011)	(0.001)	(0.014)	(0.001)	(0.016)	(0.002)
Lower secondary	0.074***	0.007***	0.085***	0.007***	0.064***	0.007***
	(0.012)	(0.001)	(0.016)	(0.001)	(0.019)	(0.002)
Post secondary non tertiary	0.017	0.002	0.012	0.001	0.001	0.000
	(0.013)	(0.001)	(0.019)	(0.002)	(0.018)	(0.002)
Higher Technical Institute	-0.136***	-0.013***	-0.114***	-0.009***	-0.172***	-0.018***
	(0.015)	(0.001)	(0.023)	(0.002)	(0.021)	(0.002)
University	-0.208***	-0.019***	-0.164***	-0.013***	-0.250***	-0.026***
	(0.012)	(0.001)	(0.018)	(0.001)	(0.016)	(0.002)
Master or/and PhD	-0.290***	-0.025***	-0.225***	-0.017***	-0.353***	-0.036***
	(0.031)	(0.003)	(0.041)	(0.003)	(0.047)	(0.005)
Married	-0.057***	-0.006***	-0.121***	-0.011***	-0.048*	-0.005*
	(0.013)	(0.001)	(0.016)	(0.001)	(0.026)	(0.003)
Head of the household	-0.024*	-0.002*	-0.142***	-0.012***	-0.033	-0.004
	(0.013)	(0.001)	(0.039)	(0.004)	(0.027)	(0.003)
Sibling of head	0.162***	0.016***	0.088**	0.008**	0.144***	0.016***
	(0.018)	(0.002)	(0.042)	(0.004)	(0.029)	(0.003)
Parent of head	0.040	0.004	-0.012	-0.001	-0.010	-0.001
	(0.025)	(0.002)	(0.051)	(0.005)	(0.035)	(0.004)
Urban	0.123***	0.012***	0.134***	0.011***	0.108***	0.012***
	(0.009)	(0.001)	(0.012)	(0.001)	(0.012)	(0.001)
Immigrant	0.127***	0.013***	0.224***	0.021***	-0.002	-0.000
	(0.014)	(0.001)	(0.018)	(0.002)	(0.021)	(0.002)
Number of other employed in the household	-0.099***	-0.009***	-0.108***	-0.009***	-0.096***	-0.010***
	(0.005)	(0.000)	(0.007)	(0.001)	(0.008)	(0.001)
Number of other unemployed in the household	0.288***	0.028***	0.321***	0.027***	0.251***	0.027***
	(0.007)	(0.001)	(0.009)	(0.001)	(0.010)	(0.001)
Number of dependent individuals in the household	0.000	0.000	-0.002	-0.000	-0.001	-0.000
	(0.005)	(0.001)	(0.008)	(0.001)	(0.008)	(0.001)
Constant term	-0.662***		-0.526***		-0.555***	
	(0.054)		(0.080)		(0.079)	
Regional dummies	✓	✓	✓	✓	✓	✓
Year dummies	✓	✓	✓	✓	✓	✓
Quarter dummies	✓	✓	✓	✓	✓	✓
Log likelihood	-227,334.6		-116,288.5		-109,676.2	
Sample size	126,0947		723,608		537,339	
Pseudo R^2	0.56		0.53		0.58	

Notes: * p<0.1, ** p<0.05, *** p<0.01

Table A2. Probability of unemployed, 2004-2007

	All		Men		Women	
	Coefficients	Marginal effects	Coefficients	Marginal effects	Coefficients	Marginal effects
1.lstatus_d1	-2.666***	-0.454***	-2.198***	-0.327***	-3.029***	-0.572***
	(0.045)	(0.008)	(0.061)	(0.012)	(0.067)	(0.010)
2.lstatus_d1	-1.970***	-0.435***	-1.822***	-0.318***	-1.930***	-0.530***
	(0.134)	(0.011)	(0.152)	(0.013)	(0.281)	(0.028)
3.lstatus_d1	-1.966***	-0.435***	-1.747***	-0.316***	-2.229***	-0.551***
	(0.108)	(0.010)	(0.118)	(0.013)	(0.329)	(0.020)
4.lstatus_d1	-1.802***	-0.425***	-1.623***	-0.310***	-1.894***	-0.526***
	(0.029)	(0.008)	(0.044)	(0.012)	(0.041)	(0.010)
5.lstatus_d1	-2.038***	-0.438***	-1.842***	-0.319***	-2.179***	-0.548***
	(0.091)	(0.009)	(0.111)	(0.013)	(0.166)	(0.014)
6.lstatus_d1	-1.915***	-0.432***	-1.719***	-0.314***	-2.488***	-0.562***
	(0.036)	(0.008)	(0.046)	(0.013)	(0.176)	(0.011)
7.lstatus_d1	-1.967***	-0.435***	-1.718***	-0.314***	-2.130***	-0.545***
	(0.028)	(0.008)	(0.045)	(0.012)	(0.037)	(0.010)
8.lstatus_d1	-1.792***	-0.424***	-1.542***	-0.305***	-1.947***	-0.531***
	(0.032)	(0.008)	(0.050)	(0.013)	(0.042)	(0.010)
9.lstatus_d1	-1.864***	-0.429***	-1.719***	-0.314***	-1.893***	-0.526***
	(0.039)	(0.008)	(0.053)	(0.013)	(0.067)	(0.012)
10.lstatus_d1	-2.130***	-0.442***	-2.017***	-0.324***	-2.191***	-0.549***
	(0.064)	(0.008)	(0.115)	(0.013)	(0.077)	(0.011)
11.lstatus_d1	-1.972***	-0.435***	-1.778***	-0.317***	-2.081***	-0.542***
	(0.040)	(0.008)	(0.067)	(0.013)	(0.051)	(0.010)
12.lstatus_d1	-2.067***	-0.440***	-1.903***	-0.321***	-2.129***	-0.545***
	(0.039)	(0.008)	(0.059)	(0.012)	(0.053)	(0.010)
13.lstatus_d1	-2.069***	-0.440***	-1.864***	-0.320***	-2.147***	-0.546***
	(0.043)	(0.008)	(0.079)	(0.013)	(0.051)	(0.010)
14.lstatus_d1	-2.158***	-0.443***	-1.933***	-0.322***	-2.252***	-0.552***
	(0.045)	(0.008)	(0.091)	(0.013)	(0.052)	(0.010)
15.lstatus_d1	-1.831***	-0.427***	-1.583***	-0.308***	-1.987***	-0.535***
	(0.041)	(0.008)	(0.061)	(0.013)	(0.056)	(0.011)
16.lstatus_d1	-2.185***	-0.444***	-1.877***	-0.320***	-2.258***	-0.553***
	(0.074)	(0.008)	(0.321)	(0.016)	(0.080)	(0.011)
Unemployed one year ago	0.520***	0.195***	0.628***	0.237***	0.459***	0.163***
	(0.023)	(0.008)	(0.037)	(0.013)	(0.029)	(0.011)
Female	0.333***	0.028***				
	(0.018)	(0.002)				
Age	0.034***	0.000***	0.021***	0.000***	0.044***	-0.000
	(0.004)	(0.000)	(0.006)	(0.000)	(0.007)	(0.000)
Age^2	-0.000***		-0.000***		-0.001***	
	(0.000)		(0.000)		(0.000)	
Primary or less	0.154***	0.013***	0.161***	0.011***	0.168***	0.018***
	(0.019)	(0.002)	(0.026)	(0.002)	(0.027)	(0.003)
Lower secondary	0.057***	0.005***	0.049*	0.003*	0.075**	0.008**
	(0.021)	(0.002)	(0.029)	(0.002)	(0.032)	(0.003)
Post secondary non tertiary	0.029	0.002	0.057	0.004	-0.003	-0.000
	(0.023)	(0.002)	(0.036)	(0.002)	(0.030)	(0.003)
Higher Technical Institute	-0.110***	-0.008***	-0.087*	-0.005*	-0.143***	-0.014***
	(0.029)	(0.002)	(0.046)	(0.003)	(0.038)	(0.004)
University	-0.143***	-0.011***	-0.048	-0.003	-0.219***	-0.022***
	(0.024)	(0.002)	(0.036)	(0.002)	(0.031)	(0.003)
Master or/and PhD	-0.268***	-0.019***	-0.195**	-0.011**	-0.325***	-0.031***
	(0.068)	(0.005)	(0.087)	(0.004)	(0.104)	(0.009)
Married	-0.099***	-0.008***	-0.219***	-0.014***	-0.002	-0.000

	(0.024)	(0.002)	(0.032)	(0.002)	(0.047)	(0.005)
Head of the household	-0.156***	-0.012***	-0.273***	-0.019***	-0.105**	-0.011**
	(0.024)	(0.002)	(0.075)	(0.006)	(0.050)	(0.005)
Sibling of head	0.103***	0.009***	-0.024	-0.002	0.174***	0.019***
	(0.032)	(0.003)	(0.080)	(0.006)	(0.051)	(0.006)
Parent of head	-0.006	-0.001	-0.037	-0.003	-0.037	-0.004
	(0.049)	(0.004)	(0.096)	(0.008)	(0.070)	(0.007)
Urban	0.042***	0.003***	0.083***	0.005***	0.005	0.001
	(0.015)	(0.001)	(0.022)	(0.001)	(0.021)	(0.002)
Immigrant	0.045	0.004	0.010	0.001	0.062	0.006
	(0.030)	(0.002)	(0.044)	(0.003)	(0.043)	(0.005)
Number of other employed in the household	-0.095***	-0.008***	-0.085***	-0.005***	-0.108***	-0.011***
	(0.009)	(0.001)	(0.012)	(0.001)	(0.013)	(0.001)
Number of other unemployed in the household	0.308***	0.025***	0.344***	0.022***	0.274***	0.028***
	(0.013)	(0.001)	(0.018)	(0.001)	(0.020)	(0.002)
Number of dependent individuals in the household	0.011	0.001	0.013	0.001	0.005	0.000
	(0.010)	(0.001)	(0.015)	(0.001)	(0.013)	(0.001)
Constant term	-0.803***		-0.683***		-0.538***	
	(0.094)		(0.143)		(0.135)	
Regional dummies	✓	✓	✓	✓	✓	✓
Year dummies	✓	✓	✓	✓	✓	✓
Quarter dummies	✓	✓	✓	✓	✓	✓
Log likelihood	-74,800.7		-34,844.5		-39,494.9	
Sample size	492,913	492,913	286,987	286,987	205,926	205,926
Pseudo R^2	0.52		0.46		0.54	

Notes: * p<0.1, ** p<0.05, *** p<0.01.

Lstat1 = Agriculture, hunting, forestry, Lstat2 = Fishery, Lstat3 = Mining and quarrying, Lstat4 = Manufacturing, Lstat5 = Electricity, gas and water supply, Lstat6 = Construction, Lstat7 = Wholesale and retail trade, repair of motor vehicles and motorcycles and materials for personal and household use, Lstat8 = Hotels and restaurants, Lstat9 = Transport, storage and communications, Lstat10 = Intermediary financial organisations, Lstat11 = Real estate, renting and business activities, Lstat12 = Public administration and defence, compulsory social security, Lstat13 = Education, Lstat14 = Health and social care, Lstat15 = Other activities offering services of social or individual nature, Lstat16 = Private households employing domestic help.

Table A3. Probability of unemployed, 2010-2014

	All		Men		Women	
	Coefficients	Marginal effects	Coefficients	Marginal effects	Coefficients	Marginal effects
1.lstatus_d2	-2.915***	-0.656***	-2.702***	-0.598***	-3.163***	-0.714***
	(0.035)	(0.007)	(0.049)	(0.012)	(0.056)	(0.008)
2.lstatus_d2	-2.132***	-0.612***	-2.040***	-0.562***	-2.273***	-0.668***
	(0.095)	(0.012)	(0.101)	(0.015)	(0.413)	(0.044)
3.lstatus_d2	-2.039***	-0.602***	-1.953***	-0.553***	-2.138***	-0.652***
	(0.026)	(0.007)	(0.038)	(0.012)	(0.040)	(0.009)
4.lstatus_d2	-2.168***	-0.616***	-2.078***	-0.565***	-2.268***	-0.667***
	(0.076)	(0.010)	(0.091)	(0.014)	(0.144)	(0.017)
5.lstatus_d2	-1.846***	-0.576***	-1.759***	-0.529***	-1.994***	-0.632***
	(0.062)	(0.012)	(0.075)	(0.015)	(0.124)	(0.021)
6.lstatus_d2	-1.610***	-0.534***	-1.543***	-0.494***	-1.913***	-0.618***
	(0.027)	(0.008)	(0.037)	(0.012)	(0.092)	(0.017)
7.lstatus_d2	-2.206***	-0.620***	-2.113***	-0.568***	-2.298***	-0.670***
	(0.025)	(0.007)	(0.038)	(0.012)	(0.033)	(0.009)
8.lstatus_d2	-2.162***	-0.616***	-2.139***	-0.570***	-2.071***	-0.643***
	(0.035)	(0.008)	(0.046)	(0.012)	(0.065)	(0.012)
9.lstatus_d2	-1.992***	-0.597***	-1.880***	-0.545***	-2.071***	-0.643***
	(0.027)	(0.007)	(0.041)	(0.012)	(0.035)	(0.009)
10.lstatus_d2	-2.077***	-0.607***	-2.029***	-0.561***	-2.110***	-0.648***
	(0.050)	(0.009)	(0.070)	(0.013)	(0.074)	(0.012)
11.lstatus_d2	-2.557***	-0.644***	-2.482***	-0.591***	-2.624***	-0.695***
	(0.059)	(0.008)	(0.091)	(0.012)	(0.078)	(0.009)
12.lstatus_d2	-1.948***	-0.591***	-1.749***	-0.527***	-2.176***	-0.657***
	(0.144)	(0.020)	(0.203)	(0.031)	(0.199)	(0.025)
13.lstatus_d2	-2.256***	-0.624***	-2.211***	-0.575***	-2.306***	-0.671***
	(0.037)	(0.007)	(0.058)	(0.012)	(0.049)	(0.009)
14.lstatus_d2	-2.063***	-0.605***	-2.006***	-0.558***	-2.087***	-0.645***
	(0.044)	(0.008)	(0.070)	(0.013)	(0.058)	(0.011)
15.lstatus_d2	-2.236***	-0.622***	-2.251***	-0.578***	-2.206***	-0.660***
	(0.031)	(0.007)	(0.048)	(0.012)	(0.042)	(0.009)
16.lstatus_d2	-2.380***	-0.633***	-2.417***	-0.588***	-2.396***	-0.679***
	(0.035)	(0.007)	(0.064)	(0.012)	(0.042)	(0.009)
17.lstatus_d2	-2.451***	-0.638***	-2.464***	-0.590***	-2.480***	-0.686***
	(0.036)	(0.007)	(0.071)	(0.012)	(0.043)	(0.009)
18.lstatus_d2	-1.935***	-0.589***	-1.808***	-0.536***	-2.068***	-0.643***
	(0.052)	(0.010)	(0.070)	(0.014)	(0.080)	(0.014)
19.lstatus_d2	-2.229***	-0.622***	-2.246***	-0.578***	-2.253***	-0.666***
	(0.046)	(0.008)	(0.082)	(0.013)	(0.057)	(0.010)
20.lstatus_d2	-2.331***	-0.630***	-2.256***	-0.579***	-2.261***	-0.666***
	(0.053)	(0.008)	(0.231)	(0.019)	(0.058)	(0.010)
Unemployed one year ago	0.546***	0.164***	0.588***	0.191***	0.511***	0.140***
	(0.021)	(0.007)	(0.034)	(0.012)	(0.028)	(0.009)
Female	0.210***	0.024***				
	(0.014)	(0.002)				
Age	0.014***	-0.000***	0.007	-0.000	0.025***	-0.001***
	(0.004)	(0.000)	(0.005)	(0.000)	(0.006)	(0.000)
Age^2	-0.000***		-0.000*		-0.000***	
	(0.000)		(0.000)		(0.000)	
Primary or less	0.133***	0.016***	0.157***	0.018***	0.089***	0.011***
	(0.015)	(0.002)	(0.020)	(0.002)	(0.024)	(0.003)
Lower secondary	0.079***	0.009***	0.096***	0.011***	0.053**	0.006*
	(0.016)	(0.002)	(0.021)	(0.002)	(0.027)	(0.003)
Post secondary non tertiary	0.019	0.002	0.015	0.002	-0.002	-0.000

	(0.018)	(0.002)	(0.026)	(0.003)	(0.025)	(0.003)
Higher Technical Institute	-0.117***	-0.013***	-0.095***	-0.010***	-0.167***	-0.019***
	(0.021)	(0.002)	(0.031)	(0.003)	(0.029)	(0.003)
University	-0.149***	-0.016***	-0.100***	-0.010***	-0.212***	-0.024***
	(0.017)	(0.002)	(0.026)	(0.003)	(0.024)	(0.003)
Master or/and PhD	-0.188***	-0.020***	-0.095	-0.010*	-0.295***	-0.033***
	(0.041)	(0.004)	(0.058)	(0.006)	(0.059)	(0.006)
Married	-0.071***	-0.008***	-0.101***	-0.011***	-0.059*	-0.007*
	(0.017)	(0.002)	(0.021)	(0.002)	(0.035)	(0.004)
Head of the household	-0.046***	-0.005**	-0.124**	-0.014**	-0.036	-0.004
	(0.018)	(0.002)	(0.050)	(0.006)	(0.036)	(0.004)
Sibling of head	0.137***	0.016***	0.093*	0.011*	0.127***	0.015***
	(0.024)	(0.003)	(0.054)	(0.006)	(0.039)	(0.005)
Parent of head	0.047	0.005	0.005	0.001	0.016	0.002
	(0.033)	(0.004)	(0.065)	(0.008)	(0.047)	(0.005)
Urban	0.071***	0.008***	0.078***	0.009***	0.061***	0.007***
	(0.012)	(0.001)	(0.016)	(0.002)	(0.018)	(0.002)
Immigrant	0.101***	0.012***	0.184***	0.021***	-0.040	-0.005
	(0.019)	(0.002)	(0.024)	(0.003)	(0.030)	(0.003)
Number of other employed in the household	-0.105***	-0.012***	-0.115***	-0.013***	-0.097***	-0.011***
	(0.007)	(0.001)	(0.009)	(0.001)	(0.011)	(0.001)
Number of other unemployed in the household	0.245***	0.028***	0.280***	0.031***	0.203***	0.024***
	(0.009)	(0.001)	(0.011)	(0.001)	(0.014)	(0.002)
Number of dependent individuals in the household	0.002	0.000	0.001	0.000	0.003	0.000
	(0.008)	(0.001)	(0.010)	(0.001)	(0.011)	(0.001)
Constant term	0.344***		0.448***		0.449***	
	(0.077)		(0.109)		(0.116)	
Regional dummies	✓	✓	✓	✓	✓	✓
Year dummies	✓	✓	✓	✓	✓	✓
Quarter dummies	✓	✓	✓	✓	✓	✓
Log likelihood	-111,637.4		-61,134.0		-50,053.4	
Sample size	526,893	526,893	296,541	296,541	230,352	230,352
Pseudo R^2	0.59		0.56		0.61	

Notes: * p<0.1, ** p<0.05, *** p<0.01

Lstat1 = Agriculture, forestry and fishery, Lstat2 = Mining and quarrying, Lstat3 = Manufacturing, Lstat4 = Electricity, gas, steam and air conditioning supply, Lstat5 = Water supply, sewerage, waste management and remediation activities, Lstat6 = Construction, Lstat7 = Wholesale and retail trade, repair of motor vehicles and motorcycles, Lstat8 = Transportation and storage, Lstat9 = Accommodation and food service activities, Lstat10 = Information and communication, Lstat11 = Financial and insurance activities, Lstat12 = Real estate activities, Lstat13 = Professional, scientific and technical activities, Lstat14 = Administrative and support service activities, Lstat15 = Public administration and defence, compulsory social security, Lstat16 = Education, Lstat17 = Human health and social work activities, Lstat18 = Arts, entertainment and recreation, Lstat19 = Other service activities, Lstat20 = Activities of households as employers, undifferentiated goods -and services-producing activities of households for own use.

Table A4 Detailed decomposition of the gender unemployment gap (selected variables) as a share of the gender unemployment gap (%)

	Explained			Unexplained		
	2004-2014	2004-2007	2010-2014	2004-2014	2004-2007	2010-2014
Employed *t-1*	35.1***	24.7***	43.9***	-29.9***	-39.3***	-45.5***
Unemployed *t-1*	18.2***	13.5***	21.2***	0.0	0.0	3.0*
Inactive *t-1*	2.6***	1.1***	4.5***	1.3***	2.2***	1.5**
Age	1.3***	0.0	1.5***	92.2***	89.9**	142.4*
Education	-5.2***	-2.2***	-9.1***	2.6	3.4	6.1
Region	0.0***	0.0	0.0***	-6.5***	-6.7**	-6.1
Married	-1.3***	0.0***	-1.5***	10.4**	28.1***	0.0
Relation	20.8***	31.5***	24.2***	-2.6	-5.6	-7.6
Urbanity	1.3***	1.1***	1.5***	-3.9	-6.7	-3.0
Immigrant	0.0***	0.0	-1.5***	-3.9***	0.0	-9.1***
Family	-6.5***	-4.5***	-7.6***	0.0	-6.7	1.5
Year	2.6***	0.0	0.0*	1.3***	0.0	0.0
Quarter	0.0	0.0**	0.0	0.0	0.0	0.0
Constant	-	-	-	-32.5	-23.6	-63.6

Notes: Employed t-1 = employed 1 year ago, Unemployed t-1 = unemployed 1 year ago, Inactive t-1 = inactive 1 year ago, Married = marital status, Relation = relationship with head of household, Urbanity = leaving in a more or less urban area, Family = employment status of other household members. ***(**)* = statistically significant differences at 1% (5%) 10% level of significance.

Table A5 Detailed decomposition of the gender unemployment gap (selected variables) as a share of the gender unemployment gap (%)

	Explained		Unexplained	
	2004-2007	2010-2014	2004-2007	2010-2014
Lstat1	133.3***	0.0	100.0***	200.0***
Lstat2	0.0**	0.0***	0.0	0.0
Lstat3	0.0**	-12.0***	0.0	0.0
Lstat4	-66.7***	0.0***	-5.9	0.0
Lstat5	-33.3***	0.0	0.0	0.0
Lstat6	-200.0***	32.0***	0.0**	0.0**
Lstat7	0.0	-4.0**	17.6*	33.3
Lstat8	0.0	-20.0***	5.9	0.0***
Lstat9	-66.7***	0.0**	-5.9	33.3
Lstat10	33.3***	0.0***	-5.9	0.0
Lstat11	33.3***	4.0***	0.0	0.0
Lstat12	-33.3***	0.0	-5.9	0.0
Lstat13	100.0***	0.0**	-5.9	0.0
Lstat14	133.3***	0.0**	0.0	0.0
Lstat15	0.0*	-4.0***	5.9	-33.3***
Lstat16	66.7	44.0***	0.0	-66.7***
Lstat17		40.0***		-33.3
Lstat18		0.0		0.0
Lstat19		4.0***		0.0
Lstat20		16.0*		-33.3

Notes: Lstat1 = employed 1 year ago, Lstat2 = unemployed 1 year ago, Lstat3 = inactive 1 year ago,
***(**)* = statistically significant differences at 1% (5%) 10% level of significance.

Before the crisis coding: Lstat1 = Agriculture, hunting, forestry, Lstat2 = Fishery, Lstat3 = Mining and quarrying, Lstat4 = Manufacturing, Lstat5 = Electricity, gas and water supply, Lstat6 = Construction, Lstat7 = Wholesale and retail trade, repair of motor vehicles and motorcycles and materials for personal and household use, Lstat8 = Hotels and restaurants, Lstat9 = Transport, storage and communications, Lstat10 = Intermediary financial organisations, Lstat11 = Real estate, renting and business activities, Lstat12 = Public administration and defence, compulsory social security, Lstat13 = Education, Lstat14 = Health and social care, Lstat15 = Other activities offering services of social or individual nature, Lstat16 = Private households employing domestic help.

During the crisis coding: Lstat1 = Agriculture, forestry and fishery, Lstat2 = Mining and quarrying, Lstat3 = Manufacturing, Lstat4 = Electricity, gas, steam and air conditioning supply, Lstat5 = Water supply, sewerage, waste management and remediation activities, Lstat6 = Construction, Lstat7 = Wholesale and retail trade, repair of motor vehicles and motorcycles, Lstat8 = Transportation and storage, Lstat9 = Accommodation and food service activities, Lstat10 = Information and communication, Lstat11 = Financial and insurance activities, Lstat12 = Real estate activities, Lstat13 = Professional, scientific and technical activities, Lstat14 = Administrative and support service activities, Lstat15 = Public administration and defence, compulsory social security, Lstat16 = Education, Lstat17 = Human health and social work activities, Lstat18 = Arts, entertainment and recreation, Lstat19 = Other service activities, Lstat20 = Activities of households as employers, undifferentiated goods -and services- producing activities of households for own use.

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