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The Impact of Austerity Measures on the Public-Private Sector Wage Gap in Europe

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Maria Michael and Louis N. Christofides±

ABSTRACT

Considering the year prior to the international and sovereign crises (2007) as a benchmark and studying all years until the crises receded in most of the 31 European countries (2013), we use the EU SILC dataset to examine the impact of public sector pay reforms on the public-private sector pay gap; we do so at the mean and along quantiles of the wage distributions, using decomposition methods to identify the explained and unexplained components of the gap. We study and code the measures taken in the 31 countries into the categorical variables Freeze and Cut and consider their impact on quantile features of the public-private pay gap using static and dynamic panel methods. Our estimates suggest that public sector freezes and/or cuts had negative and statistically significant impacts on the unexplained public-private sector pay gap, particularly evident at the median and the 90th quantile. At the 10th quantile, the impact of the measures was positive but statistically weaker. The 90th minus 10th quantile effects are negative, reflecting attempts by many countries to protect the low-paid, regardless of the initial public-private pay gap for this group. Countries which received external financial assistance had high pay gaps before the crises and displayed a variety of adjustments during the crises. Our findings are robust to definitions of the pay gap other than the unexpected one, to estimation based on a balanced panel and to the panel method used. They should aid in the formation of wage policies pertinent to public sector employees.

Keywords: Europe, Crises, Public-Private Sector Pay Gaps, Quantiles, Decomposition

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Μαρία Μιχαήλ και Λούης Χριστοφίδης

ΠΕΡΙΛΗΨΗ

Το παρών δοκίμιο μελετά το μισθολογικό χάσμα μεταξύ εργαζομένων του δημόσιου και του ιδιωτικού τομέα στην Ευρώπη, το 2007, που ήταν η τελευταία χρονιά πριν την πρόσφατη οικονομική κρίση, αλλά και κατά τη διάρκεια της κρίσης, τα χρόνια που ακολούθησαν μέχρι το 2013. Για τις εκτιμήσεις χρησιμοποιήθηκαν συγκρίσιμα δεδομένα για ένα μεγάλο αριθμό ατόμων, σε 31 Ευρωπαϊκές χωρες (Έρευνα Εισοδημάτων και Συνθηκών Διαβίωσης της Ευρωπαϊκής Ένωσης- EU-SILC).

Το πρώτο μέρος της ανάλυσης βασίζεται στη μεθοδολογία που πρότειναν οι Oaxaca και Ransom (1994), με την οποία το χάσμα χωρίζεται σε δύο μέρη: (ι) αυτό που μπορεί να εξηγηθεί με τις διαφορές στα ποιοτικά χαρακτηριστικά των ατόμων στους δυο τομείς (π.χ στο επίπεδο εκπαίδευσης τους) ή στο επάγγελμα τους και (ιι) σε ένα "ανεξήγητο" κομμάτι που οφείλεται σε άγνωστους παράγοντες. Ανάμεσα στις χώρες με το υψηλότερο "ανεξήγητο" χάσμα κατά το 2007 είναι το Λουξεμβούργο, και σχεδον όλες οι χωρες που μπήκαν σε πρόγραμμα οικονομικής στήριξης από την ΕΕ κατά τα χρόνια που ακολούθησαν, όπως Ελλάδα, Κύπρος, Πορτογαλία, Ισπανία, Ουγγαρία, Λετονια, Ρουμανία. Από την άλλη ανάμεσα στις χώρες με το χαμηλότερο χάσμα το 2007 είναι οι Σκανδιναβικές χώρες, και κάποιες χώρες της Κεντρικής Ευρώπης, όπως Αυστρία, Βέλγιο, Ολλανδία κ.ά.

Η διάσπαση του μισθολογικού χάσματος επαναλαμβάνεται για έξι επιπρόσθετα χρόνια με σκοπό να διερευνηθεί η εξέλιξη του χάσματος με την πάροδο του χρόνου και η επίδραση των μέτρων λιτότητας, που υιοθετήθηκαν στους δημόσιους τομείς, κατά τη διάρκεια της πρόσφατης οικονομικής κρίσης στην Ευρώπη. Στις περισσότερες χώρες παρατηρείται αρνητική τάση στο χάσμα κατά την περίοδο 2007-2013, η οποία καθοδηγείται κυρίως από μειώσεις του "ανεξήγητου" μισθολογικό χάσματος. Ανάμεσα στις χώρες με τη μεγαλύτερη μείωση ειναι η Ελλάδα, στην οπόια πάρθηκαν πολύ αυστηρά μέτρα μείωσης των μισθών στο δημόσιο.

Επιπρόσθετα, εξετάζεται το χάσμα κατά μήκος της κατανομής των μισθών στους δυο τομείς για τα χρόνια 2007 και 2013. Σε γενικές γραμμές παρατηρούμε μεγάλο χάσμα μεταξύ των χαμηλόμισθων υπαλλήλων του δημόσιου και των χαμηλόσμιθων του ιδιωτικού τομέα, ενώ για τους υψηλόμισθους υπαλλήλους το χάσμα μεταξύ δημόσιου και ιδιωτικού τομέα είναι μικρό ή και αρνητικό.

Τέλος, κωδικοποιώντας τα μέτρα που πάρθηκαν σε κάθε χώρα κατα τη διάρκεια της κρίσης (είτε αποκοπές, είτε παγοποιήσεις μισθών στο δημόσιο), και χρησιμοποιώντας στατικές και δυναμικές οικονομετρικές μεθόδους, βρίσκουμε ότι οι αποκοπές έχουν αρνητική και στατιστικά σημαντική επίδραση στο μισθολογικό χάσμα δημόσιου-ιδιωτικού τομέα, παρά τις ταυτόχρονες μειώσεις μισθών στο ιδιωτικό τομέα. Αυτό ισχύει στο μέσο μισθό, αλλά και στους υψηλόμισθους υπαλλήλους (90ο ποσοστημόριο της κατανομής των μισθών). Για τους χαμηλόσμιθους (10ο ποσοστημόριο) η επίδραση των μέτρων είναι θετική και μη στατιστικά σημαντική. Τα παραπάνω αντανακλούν το γεγονός ότι σε αρκετές χώρες τα μέτρα λιτότητας επικεντρώθηκαν στους υψηλόμισθους δημόσιους υπαλλήλους.

1 Introduction

The international financial crisis and the associated banking and sovereign crises shook many European economies and governments. Policy reactions to these events were many and varied: They ranged from institutional developments needed for the closer supervision and regulation of the banking and financial sectors, to country-specific programmes to resolve balance of payments problems, and to full Memoranda of Understanding (MoUs) in 'Programme' countries. Government involvement in assisting or rescuing banks increased fiscal burdens in certain countries further and austerity measures were frequently adopted. These included pay freezes, pay cuts, freezes on new hires, not-renewing temporary contracts, and other reforms related to the public sector terms of employment or pay.

In the context of positive public-private sector pay gaps, which, as shown below, were especially large in countries that were forced to seek external financial assistance, public sector austerity measures were typically the first to be implemented and they produced needed fiscal savings. However, further important public policy questions are whether (i) austerity *lowered* or *increased* the public-private pay gap, (ii) these measures occurred in the context of pay gaps which were *unexplained* by available information or *explained* by the productive characteristics of the employees in the two sectors, and (iii) austerity measures impacted all quantiles of the wage distribution proportionately, leaving pre-existing patterns unaffected, or whether austerity measures influenced and twisted the overall shape of the wage distribution.[1]

Whether reductions in public sector pay had the obvious arithmetic impact on the pay gap depended on the wage determination practices in the private sectors of the countries involved. In countries where, for a given degree of public sector austerity and labour market tightness, the private sector did not reduce wage costs substantially (this may not have been warranted, or it may have reflected underlying rigidities in wage setting), public sector austerity probably led to an arithmetic decrease in the pay gap. However, in countries where the private sector responded flexibly and more aggressively to reduce wage costs, the result was probably an *increase* in the public-private pay gap. Thus, the degree of private sector flexibility is also an important variable in determining the extent to which the pay gap declined as a result of the public sector austerity measures. To the extent that a decrease in an unduly large pay gap was an independent policy objective, beyond fiscal savings, the impact on the pay gap should be explored. Our results suggest some post-crisis outcomes consistent with such an independent objective.

[1] For discussion on the shape of quantile functions, see a number of the studies in section 3.

Whether lowering the pay gap may be an economically desirable objective depended on the *nature* of the pre-crisis public-private sector pay gap. In the context of standard Mincer wage equations for the two sectors, decomposition of the public-private pay gap into an *explained* portion attributable to productive characteristics such as education and a component which is *unexplained* by the available regressors suggests a variety of associated policy issues. Where the pay gap was large and *unexplained*, an independent target of lowering the total pay gap might be both economically desirable and politically feasible. It would be more feasible if the private sector did not incorporate into its own wage structure wage decreases imposed in the public sector. In countries where private sector flexibility is extreme, achieving this target may be more difficult, but a silver lining might be that country competitiveness would be further enhanced, balance of trade performance improved, and international borrowing requirements moderated. However, these improvements could occur at the cost of failing to achieve the target reduction in the pay gap, thereby perpetuating the internal relative wage structure, labour market inefficiencies, and income inequality.

On the other hand, a country's pay gap may be *explained* by the prevailing productive characteristics in the two sectors, in turn reflecting the nature of the country's sectoral specialisations. For instance, where the private sector is largely focussed on the unskilled production of goods and services, a country may require an especially positive pay gap in order to attract highly qualified people into the public sector. This may explain the structure of pay in some Eastern European countries, where shortages of suitably skilled labour were experienced in the post-USSR period. In these cases, an independent target of reducing the public-private pay gap may not be economically desirable. A policy of generalised internal devaluation may, instead, be more appropriate if enhancement of country competitiveness and improvements in the balance of payments are needed. A number of countries did, in fact, pursue this option.

The third issue raised above, namely the dependence of the pay gap on income quantiles, complicates these considerations further, as it is by no means the case that a public-private pay gap, which is on average positive, will represent an upward, parallel, displacement of the private sector wage distribution; nor is it clear that public sector austerity will shift down the public wage distribution in a parallel fashion. A wide variety of patterns may prevail, signifying complexity in the relevant policy issues. In some countries, the public sector austerity measures were designed to protect those at the lower end of the wage distributions and, in a number of countries (e.g. most MoU countries), negatively sloping quantile functions became even steeper following the crisis, in favour of the low paid public sector employees.

It is, therefore, by no means obvious that the public sector reforms carried out during this turbulent period have reduced the public-private pay gap and have done so appropriately along the entire wage distribution. It is not clear ex ante what the impact of public sector austerity was on the explained and the unexplained pattern of pay gap decompositions. We use cross section data from the EU SILC survey years 2008 to 2014 pertaining to incomes in 2007 (the last year during which all countries exhibited growth) and up to 2013 (the last crisis year for most European countries) to analyse the pay gap in 31 European countries. Given the differences in the application of restraint in these countries, we also explore changes in the pay gap across the wage distribution. Finally, we consider formally the impact of wage freezes and wage cuts on the public-private pay gap at the mean and at different quantiles of the wage change distribution.

This is the first paper that studies the austerity measures taken during the recent international and sovereign crises and their impact for as many countries, using data that are consistently constructed cross-sectionally. Our goal is to consider whether the measures and policies adopted by the various European countries during the crises years have had an impact on the public-private pay gap, its explained and unexplained composition and its quantile architecture. These findings provide evidence on the impact of austerity measures on the public-private wage gap, thereby assisting public sector wage setting and policy making.

In section 2, we provide an overview of the austerity measures adopted in European countries. In section 3, we review the literature that deals with the public-private sector wage gap during the crisis years and on which we build. In section 4, we describe the dataset used for this study and the creation of important variables. In section 5, we discuss the main econometric methodology used and the results obtained. Section 5 is composed of three main parts: a study of the gap at the mean for the income period 2007-2013 (EU SILC Surveys 2008-2014), a study of the gap at different quantiles for 2007 and 2013, and the impact of adopting pay cuts or pay freezes on the unexplained gap at the median, at the 10^{th} and 90^{th} quantiles, and the difference between them, using fixed effects and the dynamic panel method of Arellano and Bond (1991). Section 6 concludes. An appendix is provided for the convenience of the referees but it can be included in a discussion paper version of the paper instead, if that is deemed more appropriate.

2 Austerity Measures in Europe

A series of measures were introduced in many European countries after 2008. Eastern European countries, or new Member States, were among the first to introduce austerity measures in the public sector. Three of them, namely Latvia (LV), Hungary (HU) and Romania (RO) entered the EU Balance of Payments Assistance Programme in 2008-2009

and adopted public sector austerity measures. These included fiscal consolidation measures in exchange for financial assistance from the EU and the IMF. The balance of payments assistance was designed in phases with each release of funds tied to the achievement of structural reforms. Other Eastern European countries implemented pay cuts (e.g. Estonia (EE), Croatia (HR), Lithuania (LT) and the Czech Republic (CZ)) or pay freezes (e.g. Bulgaria (BG) and Slovenia (SI)) in the public sector, starting in 2009-2010, even though they did not face direct external pressure. Poland (PL) and Slovakia (SK) also had pay freezes from 2011 to 2013.

Another group of countries resorted to financial assistance from the EU or the IMF in order to preserve financial stability. Ireland (IE), which signed an agreement with the IMF, the EU and the ECB (the 'Troika') in 2010, was among the first to introduce a public wage freeze in 2008, while during 2009-2010 pay cuts were adopted. Greece (EL) negotiated and signed a bailout agreement with the Troika in May 2010 and implemented enormous wage reductions through structural reforms in the public sector during the following years. In 2011, they rationalised pay scales, abolished benefits, and changed wage evolution based on seniority. Portugal signed an agreement in 2011 and public sector wage cuts were implemented during 2011-2012. Spain (ES) also signed an agreement with the Troika but the terms of the lenders were only related to the banking sector. Despite that, Spain adopted measures to postpone an increase in wages in the public sector. Finally, Cyprus (CY) was the last country to apply for financial assistance in 2012 and, thus, austerity measures came at the end of the period studied here. Italy (IT) and the United Kingdom (UK) also implemented pay freezes or pay cuts, even though there was no pressure from external lenders.

The intensity and coverage of measures taken in the public sector differ among countries. In many countries, such as Portugal (PT, 2011-2014), Spain and Italy (2010), Ireland (2009, 2010, 2013), Cyprus (2013), and the UK (2010-2013), protection was given to low-paid employees, or the measures targeted public sector employees who were highly paid. Other examples are the Czech Republic in 2010 as well as Latvia and Lithuania in 2009. In addition, in most of the countries, these measures were considered temporary, perhaps in order to gain political acceptance. In practice, these turned out to be permanent in most countries — Romania returned to the pre-crisis level of wages in 2013.

Finally, all Nordic countries (Denmark (DK), Finland (FI), Iceland (IS), Norway (NO), and Sweden (SE)) and central European countries (such as Austria (AT), Belgium (BE), Germany (DE), France (FR), Luxemburg (LU), and the Netherlands (NL)) adopted no measures, or very minor ones, since they were not deeply affected by the crisis. However, many of these countries had already implemented public sector reforms in 2008 (e.g.

France, Denmark, Germany). Switzerland (CH) and Iceland (IS), being on currencies other than the euro, conducted appropriate monetary, rather than fiscal policy. Malta (MT) imposed no austerity measures during 2011 to 2013 but, instead, allowed pay increases to occur.

A summary of the measures adopted in the public sector is provided in Table 1 and in the Appendix Table A2. Measures introduced during the last quarter of a year may have been judged to have taken effect in January of the following year. Because of the difficulty of maintaining quantitative accuracy for the large number of countries, we confine regressors based on Table 1 to limited, discrete, ones.

Table1: Austerity Measures in the Public Sector of European Countries during 2008-2013

	2008	2009	2010	2011	2012	2013
AT			Pay Increase	Pay Increase	Pay Increase	Pay freeze
BE		Increase based on price index	Increase based on price index	Increase based on price index	Increase based on price index	Increase based on price index
BG		Pay freeze	Pay freeze	Pay freeze	Pay freeze	Pay freeze
CH						
CY				Pay freeze (Oct.)	Pay freeze/ cuts in net wage	Pay freeze / Pay cut (progressive)
CZ			Pay cut in senior officers	Freeze/ Pay cut (exclude teachers)	Pay freeze	Pay freeze
DE			Pay Increase	Pay Increase	Pay Increase	Pay Increase
DK			Increase (less than inflation)	Pay Increase	Pay Increase	Pay Increase
EE		Pay freeze /Pay cuts	Pay freeze /Pay cuts	Pay freeze	Pay freeze	Pay freeze
EL		Pay freeze for the high paid (Nov.)	Pay cuts	Pay cut: rationalize pay scales, increase in hours	Pay freeze/ Pay cut, decrease in min-wages-	Pay cuts
ES			Pay cuts (higher for the high paid)	Pay freeze	Pay freeze, Pay cuts, increase in hours	Pay freeze
FI			Pay rise	Pay rise	Pay rise	Pay rise
FR			Increase but less than inflation	Increase but less than inflation	Increase but less than inflation	
HR		Freeze/ Pay cut: (public managers)	Pay cut		Freeze/ Pay cut:	Freeze/ Pay cut
HU	Pay cut	Freeze/ Pay cuts (cut of 13th salary)	Freeze/ income tax reforms			
IE	Freeze	Freeze /Cut in net pay (higher cuts to high paid)	Freeze/.Cut (higher cuts to high paid)	Pay freeze	Pay freeze	Pay freeze /Cut for high paid only
IS						
IT			Freeze/ cuts for high wage earners	Pay freeze	Pay freeze	Pay freeze
LT	Pay cut (Dec.)	Pay cut (higher to high paid)	Pay cut (Oct)	Pay freeze	Pay freeze	Pay freeze
LU				Pay freeze	Pay increase due to wage indexation only (Oct.)	Pay increase due to wage indexation only
LV	Pay cut	Pay cut (protection to the low paid)	Pay cut			
MT				Pay increase	Pay increase	Pay increase
NL			Pay increase for local		Pay increase	
NO		Pay increases	Pay increases	Pay increases	Pay increases	Pay increase
PL				Pay freeze	Pay freeze	Pay freeze
PT			Pay freeze	Pay freeze/ Pay cut (higher to high paid)	Pay freeze/ Pay cut (higher to high paid)	Pay freeze/ Pay cut (higher to high paid)
RO			Pay cut	Pay cut	Pay increase	Pay increase
SE					Pay increase	Pay increase
SI		Pay freeze		Pay freeze	Pay cut	Pay freeze/Pay cut
SK		Pay increase	Pay increase	Pay freeze	Pay freeze	Pay freeze
UK		Pay increase in local gov.	Pay freeze (protection to low paid)	Pay freeze (protection to low paid)	Pay freeze (protection to low paid)	Pay freeze (protection to low paid)

Note: A detailed list of the sources is provided in Appendix Table A2.

3 Recent Literature

There is only a small number of studies reviewing the impact of the recent financial crisis on the public-private pay gap. Nikolic et al (2017) were the first to examine the impact of the crisis for Croatia and Serbia. They use data from the Labour Force Survey (LFS) for the two countries and compare the pay gap for 2008 and 2011. They decompose the gap at the mean and at different quantiles, using an extension to the Oaxaca-Blinder decomposition, based on Recentered Influence Function (RIF) regressions and reweighting, as described in Firpo et al (2009) and Fortin et al (2011). In Croatia the total gap increased by 13%, since government measures focused on raising revenue rather than cutting expenditure, while in Serbia the pay gap declined by 11.2%. The unexplained part of the gap increased in both countries. As in other studies, at the lower end of the wage distribution the public premium increased, while at the highest end public wages suffered.

Christopoulou and Monastiriotis (2015) investigate the impact of the crisis on the pay gap for Greece, using the LFS for Greece for the years 2009-2013. They use Oaxaca decomposition and correct for selection in the public sector (using the variable Public History, i.e. whether a parent or spouse is or used to be employed in the public sector). They find that the public sector premium increased in the period 2009-2011, while it decreased after 2011. They also perform decomposition at different quantiles using the RIF approach proposed by Firpo et al (2009), and conclude that the more highly paid public workers were affected the most.

Campos et al (2017) appears to be the only extant cross-country paper that studies the wage-gap during the crisis years. They use micro data from EU SILC for the survey years 2004-2012 for 25 EU countries and macro National accounts data for 19 countries for the period 1970-2014. While their main interest is to explore the structural determinants of the differences in pay gaps among countries, they notice that pay gaps narrowed over time, possibly because of the crisis. They find that improvements in the cyclically adjusted primary balance are associated with significant decreases in the public sector pay gap.

A number of recent studies examine the pay gap for Spain. Hospido and Benito (2016) used the “Continuous sample of working histories” in Spain, which makes use of longitudinal administrative data for the years 2005-2012, in combination with tax files matched to social security, and information for hours worked from the Spanish LFS. They find a positive wage premium in the public sector, for both men and women, even after accounting for characteristics and endogenous selection. This differential increased between 2005 and 2009, while for the remaining period, the gap decreased for both genders. In the whole sample 2005-2012, the unexplained portion of the gap is around 57%. Using the quantile decomposition by Chernozhukov et al (2013), they uncover substantial variation in the

premium along the wage distribution. This variation is offset by opposite patterns of selection in the public sector (positive selection for the low paid, negative for the highly paid).

Anton and Munoz de Bustillo (2015) use the Structure of Earnings Survey (SES) 2010 for Spain and conclude that there is a positive wage premium for the public sector, especially for the low skilled. They also find that the gender gap is larger in the private sector. Ramos, Sanroma and Simon (2014) use the same survey with matched employer-employee micro-data. Their analysis is separated by gender and type of contract and they conclude that a positive wage premium for the public sector exists that is partially explained by the characteristics of the firm. The wage premium is found to be greater for females and fixed term employees and falls across the wage distribution.

The SES dataset is also used by De Castro et al (2013) to study the pay gap for 26 countries, for 2006 and 2010. Even though this dataset contains direct information on whether the individual belongs to the public sector, for some countries[2] the SES data do not include the Public Administration NACE activity, therefore the results for these countries are not representative or comparable with the others. Using Oaxaca-Blinder decompositions, the public-private wage gap in 2010 is found negative or insignificant only in 6 out of 20 comparable countries, namely Denmark, Estonia, Finland, France, Hungary and Slovakia. The unexplained wage gap is positive and significant in Cyprus, Germany, Spain, Greece, Ireland, Poland and Slovenia, which (except for Germany) are also the high total gap countries.

Cross-country studies by Depalo et al (2015) and an earlier one by Giordano et al (2011), study the gap for the pre-crisis period, using the EU SILC 2004-2007 for 10 countries. Portugal, Spain, Greece, Ireland and Slovenia are among the countries with the highest gap at the mean and, with the exception of Slovenia, these countries also have a very high unexplained component.

Dickson et al (2014) assess a life cycle version of the public-private pay gap and, using a common data set (the European Community Household Panel over the period 1994-2001), conclude that of the countries that they study (Italy, Germany the Netherlands, France and Spain and the UK as a point of comparison) only France and Spain show a positive life cycle gap which is more evident at the lower end of the wage distribution — see also Postel-Vinay (2015). A very complete assessment of earnings and employment dynamics over the life cycle provides a much needed complementary perspective to the point-in-time approach adopted here, made necessary by the very much larger number of countries involved and

[2] AT, BE, IT, LU, MT and PT in 2010 and four additional countries (DE, ES, FR, EL) in 2006.

the focus on assessing the effects of the international crisis on the pay gaps prevailing in them.

How public sector pay policies interact and co-exist with the private sector in the context of equilibrium models has been the subject of much recent research. Cavalcanti and dos Santos (2015) examine the all-important question of the misallocation cost that could arise in an equilibrium model that involves occupational choice, heterogeneous agents and imperfect enforcement. The possible productivity losses that arise from an unexplained public-private sector pay gap is one reason that motivates concerns for such a premium. Aversion to unwarranted income inequality is another.

4 Data and Sample Creation

In this paper, we use the Cross-Sectional EU Statistics on Income and Living Conditions (EU SILC) for the survey years 2008-2014, which refer to incomes earned during 2007-2013. The dataset contains information on an individual's personal characteristics, working status, type of employment, occupation, annual income, hours of work, the industry of employment, etc. For each year, we use 29 to 31 European countries depending on availability as stated in Table 2. A common data collection procedure for all countries and common variable definitions make comparisons across all these countries both interesting and appropriate.

Table 2: Countries Included in the Dataset for Each EU SILC Survey Year

Countries	2008	2009	2010	2011	2012	2013	2014
EU	27	27	27	27 (plus HR henceforth)	26	28	28
PLUS	IS,NO	CH,IS	CH,IS,NO,	CH,IS,NO	CH,IS,NO	CH, IS, NO	CH,NO
MISSING	CH,HR	HR,NO	HR		BE,IE		IS
TOTAL USED	29	29	30	31	29	31	30

We define the public sector as the NACE activity "Public administration and Defence".[3] This is done for several reasons, but mainly because we want to focus on the comparison between countries and the need for homogeneity is important. The private sector is defined as the remaining NACE activities, except for the education industry, which is excluded from the sample because it is considered to be substantially public in most countries. Note that there might be a number of public employees in other NACE Activities, such as Health or Construction, depending on the composition of the public sector in each country. However, here the emphasis is on policy measures that target mainly the public administration sector.

[3] It is defined as Nace Rev.1 code L for 2008, and Nace Rev.2 code O for 2009-2014.

In addition, wage setting procedures in other industries with a sizeable public component such as health may differ from those prevailing in the public administration sector. In order to keep the same treatment for all countries and to avoid losing more observations, we do not drop other NACE industries, since it is believed that the number of public sector employees there is small.[4] Moreover, based on the analysis in Christofides and Michael (2013, Figure 1), being in the health sector involves no significant deviation from the mean wage for more than half of the countries while, for the rest, this deviation is very small.

To study the wage gap, we use the hourly wage, which is constructed using Annual Gross Income divided by the Number of Months Worked, multiplied by 4.2 weeks, times the Weekly Hours of Work.

We select individuals who are employed in situations comparable to those prevailing in the public sector, since this is important when it comes to measuring wage differentials between the public and private sectors. As a result, we exclude from the sample individuals who work part-time or below 30 hours per week, students, the disabled, soldiers, and individuals aged below 25 and above 60 years old. We include in our analysis only employees and remove the self-employed and family workers. In addition to the above, we remove occupations with very low presence in the public sector, such as craft and related trades workers, plant and machine operators (except for drivers), and assemblers.[5]

We clean the data from possible mistakes or inconsistencies and drop individuals with missing important information (e.g., labour force or employment status, number of months worked, weekly hours worked, and annual income) and individuals with hourly wages below the 1st percentile of the hourly wage distribution and above 3 times the 99th percentile. A job permanency variable is not used in order to attain a comparable treatment of countries and years.[6] Finally, we remove individuals who changed jobs in order to avoid a possible mismatch between income and hours worked.[7]

In the final sample, we have around 96,000 individuals per year and the public administration employees are approximately 14% of the individuals in the total sample (See Appendix Table A1 for the beginning and end-of-period descriptive statistics).

[4] Regarding the health industry, this is true for most countries with the possible exception of the Scandinavian countries. Based on Eurostat, National Accounts data (ESA1995), the percentage of general government employees in Nace activity Health and Social Work for 2007 was 28.6% in BG, 50.5% in ES, 55.6% in IT, 56% in CY, 3% in LU, 8.7% in NL, 77% in FI and 83% in SE. In addition, based on some National Statistical Institutes, this percentage is 2,1% for DE in 2015, 51% for the UK in 2010, 88% for DK and entirely private for BE. Unfortunately, no information for other countries appears to be available.

[5] These correspond to ISCO occupations codes 7 and 8 (with the exception of the two-digit code 83, i.e. Drivers and mobile plant operators).

[6] Job permanency is not available for some countries/years (e.g. the UK in 2008). In some countries, most or all public employees are permanent (e.g. NO, EE, RO, DK).

[7] The income variable in EU SILC refers to last year's income, while hours worked refers to the interview year.

5 Methodology and Results

The econometric analysis below addresses the three questions in the introduction and is organised in three sub-sections in the following order: (i) How did the public-private sector wage gap at the mean (explained and unexplained) change over time and vary across countries? (ii) For each country, what was the shape of the total gap at different quantiles, what part was unexplained and how did both measures change over time? (iii) What was the impact of public sector austerity measures on various features (the mean/median and specific quantiles) of the pay gap? In the first two sub-sections, we use a variety of econometric techniques including the Oaxaca and Ransom (1994) decomposition at the mean (or OR), in section 5.1, and the quantile decomposition method of Chernozhukov et al (2013), in section 5.2. In order to study the impact of pay cuts and pay freezes in the public sector on the pay gap, we use variables based on Table 1 and country and year fixed effects in a static context, and we explore potential dynamic elements in this relationship using a dynamic panel based on Arellano and Bond (1991).

5.1 Decompositions at the mean

By applying the OR decomposition, we are able to see which part of the gap can be explained by differences in individual and job characteristics (endowment effect) and what remains unexplained by the regressors available in the EU SILC surveys and is attributed to differences in the coefficients. It is this latter component which poses important questions for economic policy, given that it may be more closely related to discrimination and inefficiency.

The initial Oaxaca (1973) and Blinder (1973) decomposition allows for the regressor coefficients to vary across sectors, and the difference in ln wages among the two groups Public (P) and Private(R) can be given by:

$$\overline{\ln W_P} - \overline{\ln W_R} = (\overline{X}_P - \overline{X}_R)b_P + \overline{X_R}(b_P - b_R), \qquad (1)$$

where the left hand side in equation (1) is the difference between the average natural logarithms of hourly wages in groups P and R, and b_P and b_R are the estimated coefficients from separate OLS regression equations for groups P and R respectively. On the right hand side, the term $(\overline{X}_P - \overline{X}_R)b_P$ is the *explained* wage gap, i.e. the portion of the gap that is explained by the average difference in personal characteristics evaluated at the public sector coefficients and average job attributes in X. The term $\overline{X_R}(b_P - b_R)$ is the *unexplained* wage gap, i.e. the difference in the returns to individual characteristics times the private sector mean vector of characteristics. The weighting factors b_P and $\overline{X}_R$ could

be reversed, resulting in a different unexplained component, an undesired implication that we avoid by the use of the OR decomposition in equation (2):

$$\overline{\ln W_P} - \overline{\ln W_R} = (\overline{X}_P - \overline{X}_R)b_N + \overline{X_P}(b_P - b_N) + \overline{X_R}(b_N - b_R)\,, \qquad (2)$$

where b_N is a non-discriminatory structure estimated using a pooled (public and private) regression. The term $\overline{X_P}(b_P - b_N)$ is the *public sector advantage* and can be interpreted as the portion of the unexplained gap due to higher returns to public characteristics, while $\overline{X_R}(b_N - b_R)$ is the portion of the unexplained gap due to lower returns to private characteristics, namely, the *private sector disadvantage*. The unexplained component is now the sum of the second and third terms on the RHS. The explanations above are clearest when the public-private wage gap is positive and when the explained and unexplained components are also positive, each contributing to the LHS sum in their own way. When the gap is negative, as happens in some countries and periods, the same logic applies but care is needed at the interpretation stage.

In what follows, hourly earnings are always in natural logarithm terms. The specification of the ln wage equation includes five-year age groups (age 25-29 up to age 55-60), education groups (lower, secondary and higher), a gender indicator, and four occupation groups based on the ISCO occupation codes.[8] As indicated above, the explanatory variables are all dummy variables and therefore the associated coefficients quantify differences in respect to the base category. In order to avoid dependence of the decomposition results on the omitted group, we normalise the coefficients for each category to sum to zero, as suggested by Yun (2005).

To facilitate the presentation of our results, we collect (based on the total conditional gap in 2007) the countries into three loosely homogeneous groups: namely the low-gap countries (Figure 1a), the medium (Figure 1b), and the high-gap (Figure 1c) countries. The detailed OR decomposition results for each year and country are provided in Appendix Tables A3-A9.

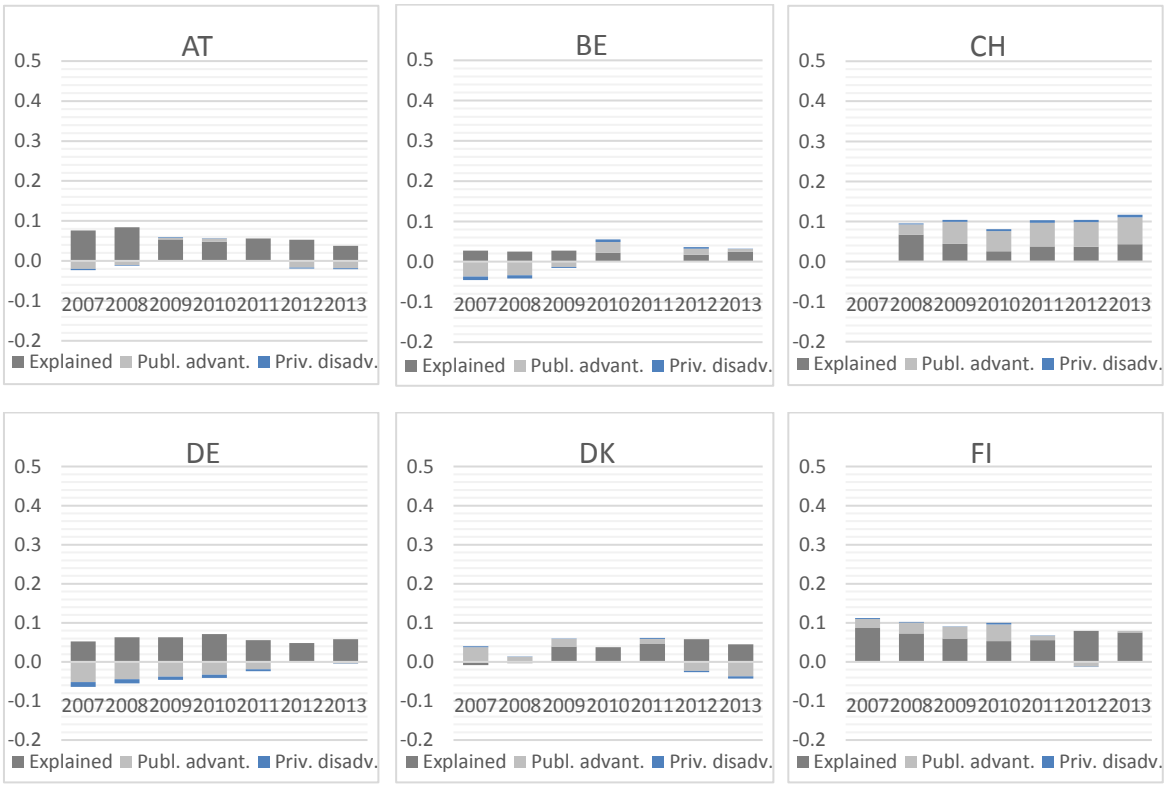
Among the low gap cases, we have all the Northern European countries (DK, EE, FI, IS, NO, and SE), Central European countries (AT, BE, CH, DE, FR, and NL), as well as the UK and MT.

Note that, with the exception of EE (where the gap increased above 0.10 ln wage points after 2007), countries in this group generally maintained a low gap for most of the years

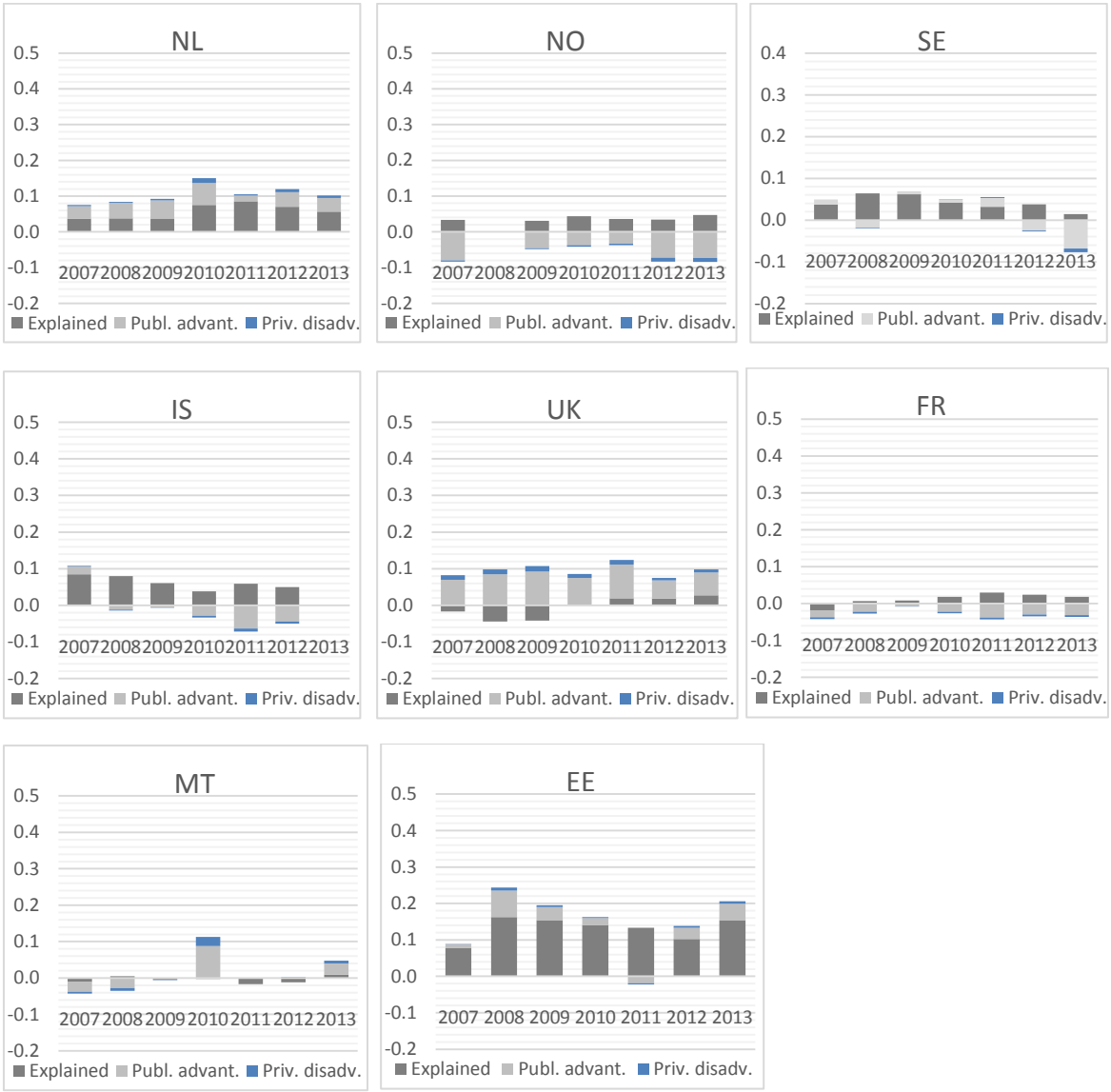
[8] The four occupation categories are (a) legislators, senior officials, managers (11-13); (b) professionals (21-24), technicians and associate professionals (31-34), skilled agricultural and fishery workers (61), and armed forces (01); (c) clerks (41-42), and service and shop sales workers (51-52); and (d) Drivers and Mobile Plant Operators (83), elementary occupations (91-93).

under study. Except for EE, the UK and AT (Freeze in 2013), no particular austerity measures were taken regarding public sector pay in these 14 countries. On the contrary, many of them provided pay increases to public sector employees (see Table 1). In the case of EE, the total gap increased significantly in 2008 but measures were adopted from 2009 onwards that reduced the gap. The 2008 increase in the gap, which was largely due to an increase in the explained component, might be a result of the reorganisation of the government during the period 2008 to 2011.[9] The pay cuts adopted in 2009 and 2010 seem to have reduced both the total and the unexplained portion of the gap, but the gap increased again in 2013. For the remaining countries, the total gap can be largely explained, with the exception of the UK where it is almost entirely unexplained (see Appendix Tables A3-A9). Over time, the unexplained portion became smaller or even negative in a number of the 14 countries. However, DE, which began the period with a negative and mostly unexplained total, ended up with a small and largely explained gap in 2013.

Figure1a: The OR Decomposition Results for the Low-gap Countries 2008-2013



[9] During this period, mergers of inspectorates and boards took place in 7 out of 11 ministries, more than twenty governmental organisations were abolished, and seven new multifunctional agencies were established (see COCOPS (2013)).

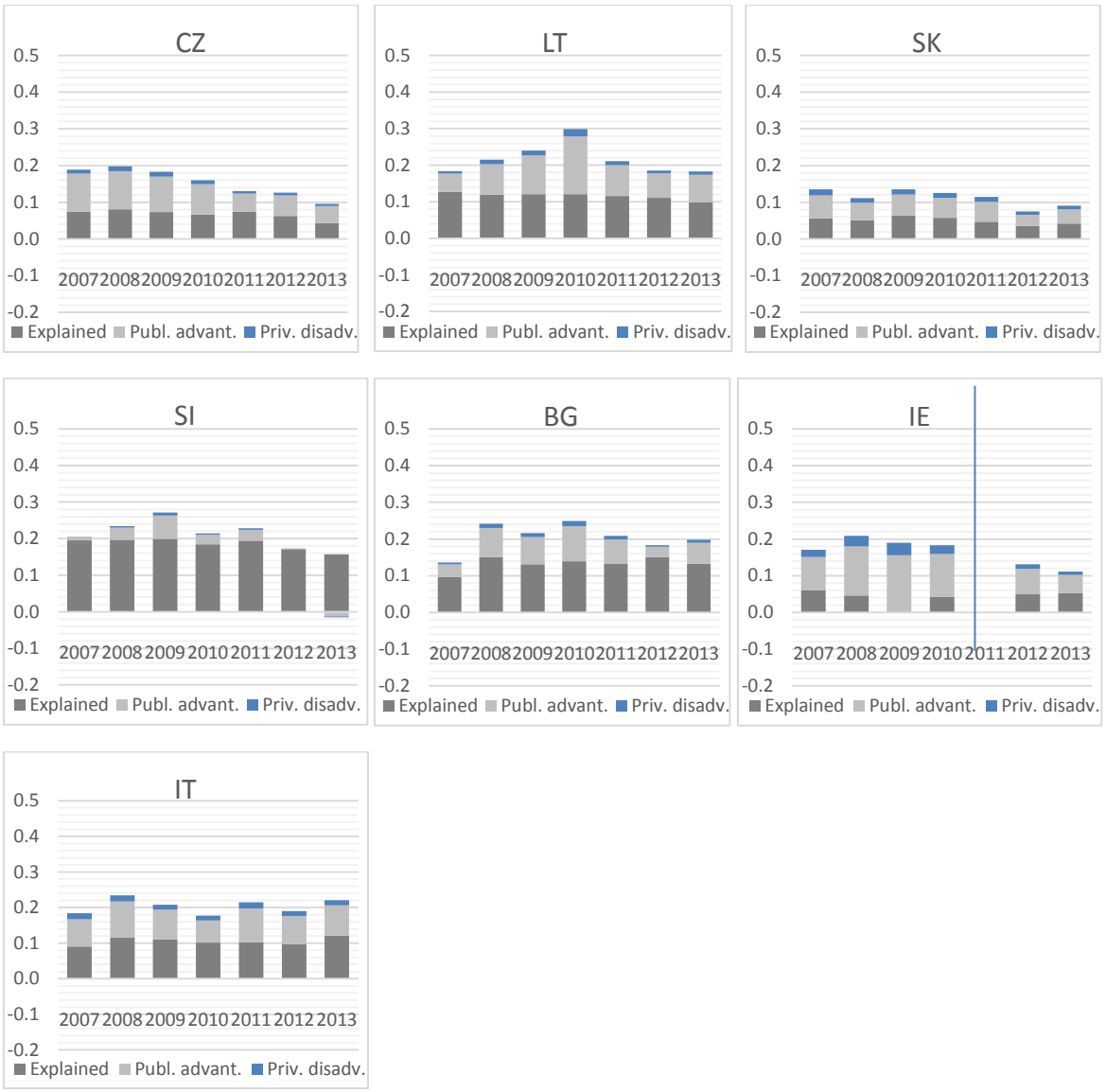


Some new member states (CZ, LT, SK, SI, BG), IE and IT, had medium gap levels in 2007 (see Figure 1b). Most of them adopted pay freezes or pay cuts but at a different pace or time. SI is the only country where the gap is almost entirely explained for most years, and it decreased in 2012 and 2013 when pay cuts were adopted in the public sector. In CZ, IE and IT, the adoption of pay cuts also had an impact on reducing the gap, at least for the year of implementation. In LT, even though pay cuts were adopted early in 2009, the gap actually increased. A decline in the gap is observed in 2011, after the pay cuts adopted in October 2010.

SK and BG adopted only pay freezes in the public sector. In BG the gap increased significantly in 2008 and remained high in the years following, while, in SK, the gap actually decreased and the country entered the low gap group by 2012.

Note that, in most cases, fluctuations of the total gap are due to the changes in the unexplained portion of the gap, since the explained gap does not change significantly over the period due to the stability of most explanatory variables.

Figure.1b: The OR Decomposition Results for the Medium-gap Countries 2008-2013



Note: The vertical line indicates the year of signing a financial assistance agreement with EU/IMF

The remaining countries have total gaps above 0.2 ln wage points (Figure 1c), with the highest gap in 2007 observed in LV (0.389 ln wage points). In this group, we have high unexplained gaps and (with the exception of IE, which appears in Figure 1b) all of the countries that operated under a financial assistance programme. We denote the year of first signing up for assistance with a vertical line.

A substantial decrease in the gap over the whole period is observed for EL, HU and LV. These countries were all under a financial assistance programme and implemented a series of measures and reforms. Among the pay reforms adopted in EL were the rationalisation of pay scales, the abolition of various benefits, of wage growth with seniority, of the 13th and 14th monthly salaries, an increase in the hours to be worked, etc. Similarly, in LV, additional

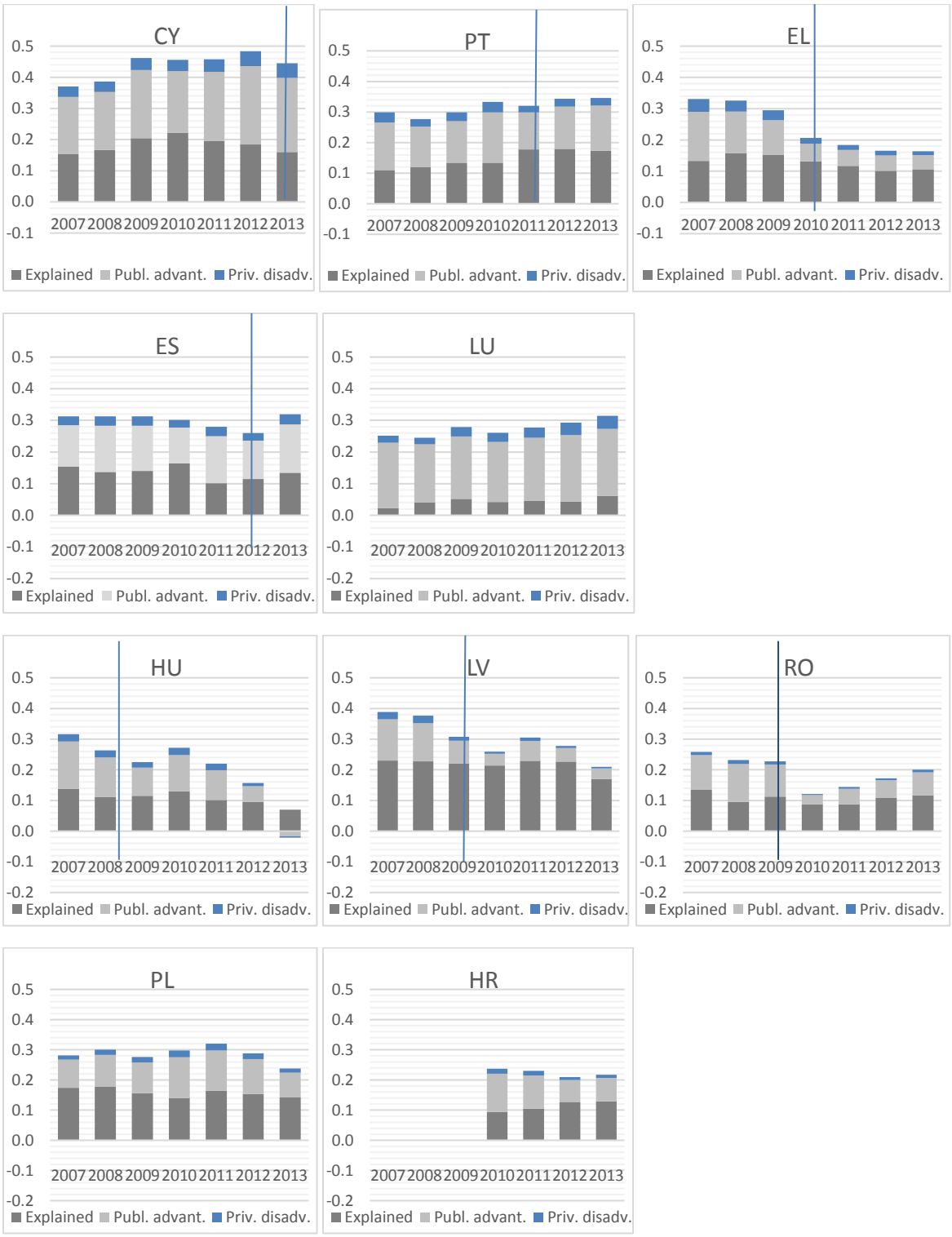
payments and bonuses were abolished and a new pay system was introduced for all central and local governments. In HU, besides the various cuts, there was a reform of the income tax system. These reforms resulted in the reduction of the unexplained gap in all three countries and their impact on the gap appears to be a lasting one.

In CY, PT and LU, the total gap generally increased during the period under study. In CY, measures affecting the gross wage came later and were only implemented in early 2013, a few months before the official agreement with the Troika. The effect of the measures adopted in 2011-2012, even though they reduced the net wages of public sector employees (through increased contributions), is not reflected in the data, since gross wages are used. In LU on the other hand, there were no measures taken other than a partial freeze in 2011, and the gap continued to grow over the sample period.

In RO, another programme country, there were radical wage cuts in 2010 (among the highest in the EU), but most of these were reversed in 2012 and 2013. This is reflected in the trend of the total gap, as seen in Figure 1c.

Table 3 provides a summary of the country experience with the austerity measures taken and their relation to the change in the public-private unexplained gap. Considering that many countries did not take any public sector pay reduction measures (the leftmost column, Table 3), Table 3 reflects the endogenous adjustments in the private sector occasioned by the international crisis. Countries for which Freeze=Cut=0, can be divided into those where the 2013-2007 change in the pay gap was positive, and those where it was negative (no country had a change in the pay gap which was exactly at zero). The positive change cases may be the result of very flexible private sector labour markets, which reduced wages substantially as a result of the international crisis. In the negative change group, pay in the public sector was reduced more than in the private sector, reducing the gap. In countries where some public sector pay austerity measures were taken (rest of Table 3), the extent of private sector declines in wages produced a separation between $\Delta GU>0$ and $\Delta GU<0$ countries.

Figure 1c: The OR Decomposition Results for the High-gap Countries



Note: The vertical line indicates the year of signing a financial assistance agreement with EU/IMF

Table 3 Change (2013 - 2007) in the Unexplained Gap and the Austerity Measures Taken

	F=*C*=0	*F*=1; *C*=0	*F*=0; *C*=1	*F*=*C*=1
$\Delta G^U>0$	BE=+0.053 DE=+0.059 MT=+0.071 NL=+0.007	AT=+0.002 BG=+0.025 LU=+0.023		CY=+0.069[p] EE=+0.040 ES=+0.026[p] IT=+0.006 LT=+0.028
$\Delta G^U<0$	DK=−0.083 FR=−0.012 FI=−0.021 NO=−0.001 SE=−0.089	PL=−0.011 SK=−0.030 UK=−0.011	LV=−0.119[p] RO=−0.040[p]	CZ=−0.063 EL=−0.140[p] HU=−0.199[p] IE=−0.052[p] PT=−0.016[p] SI=−0.025

Notes:
1. The discrete variable F=1 denotes a country that, based on Table 1, had imposed a public sector pay freeze at any time during the period studied; the discrete variable C=1 denotes a country that, based on Table 1, had imposed a public sector pay cut at any time during the period studied. Otherwise F=C=0. More information on the reforms undertaken in the public sector appears in Table 1 and the Appendix Table A2.
2. The superscript p indicates countries that received financial assistance through a balance of payments programme or a full MoU.
3. For AT, BG, EE and SI the unexplained gap is not significant at the 5% level in either 2007 or 2013. The sign < or > is based on the arithmetic value obtained by subtracting the 2007 unexplained gap from its 2013 value; for instance, in the case of AT, the value +0.002 in Table 3 is obtained by subtracting -0.023 (in Table A3) from -0.021 (in Table A9).
Source: Appendix Tables A3 and A9 and authors' calculations.

We return to these issues in section 5.3, where the impact of measures taken in the public sector on the public-private pay gap is considered.

5.2 Quantile decomposition

As indicated in Section 2, a number of countries adopted austerity measures that targeted only the highly paid. The reasons adduced for so doing included political acceptability and 'social justice'. These measures did not take into account the pre-existing public-private wage gap at different quantiles. As a result, exempting the lowest quantiles from public sector measures aggravated the relative position of the poorly paid in the private sector and often increased further the gap between the lowest paid in the two sectors. At the other extreme, some countries with low pay gaps at the top quantiles pushed these gaps into the negative quadrant (e.g., IE and LV below), resulting in disincentives for the directorial cadres to remain in the public service. Thus, the various crises under study impacted the entire wage distribution in both sectors and hence the public-private wage gap at different quantiles. These changes have the important policy implications discussed in the introduction.

We use quantile decomposition techniques to study how the gap varies across quantiles. We explore how this gap changed over time and, in particular, when comparing the pre-

crisis income year of 2007 with 2013, a post-crisis year in most European countries. We decompose the difference between distributions of wages for the two sectors using a counterfactual distribution, based on the quantile regression methods proposed by Chernozhukov et al (2013),[10] similar to Machado and Mata (2005). The decomposition can be described by equation (3):

$$F_{w(P/P)} - F_{w(R/R)} = [F_{w(P/P)} - F_{w(R/P)}] + [F_{w(R/P)} - F_{w(R/R)}], \quad (3)$$

where $F_{w(R/P)}$ is the counterfactual distribution that would have prevailed for public employees if they faced the private wage schedule, $[F_{w(P/P)} - F_{w(R/P)}]$ is the effect of coefficients (unexplained gap) and $[F_{w(R/P)} - F_{w(R/R)}]$ captures differences in the characteristics in the two sectors (explained gap) – see Chernozhukov et al (2013, p. 2210).

The conditional distribution is estimated using linear quantile regression. More specifically, 100 quantile regressions are estimated for each sector to get the quantile regression coefficients for each group, public and private. The conditional quantile function for each sector is then calculated, given the estimated coefficients. Subsequently, the quantile function is inverted to obtain the conditional distribution function. For the estimations, bootstrap standard errors were produced.[11]

Similar to other studies, most countries exhibit a negative slope across quantiles. Based on Table 4, the difference in the pay gap between the 90th and the 10th quantile is negative for all countries and both years, except for **BG**, **RO** and **HU**. ¨

[10] Their methodology also covers regression methods, other than quantile regressions, such as duration and distributional regressions.
[11] For the calculation of standard errors, 500 repetitions were applied.

Table 4: Difference in Pay Gap: 90th minus 10th Quantile (income years 2013 and 2007)

Countries	Total gap 2007	Total gap 2013	Unexplained Gap 2007	Unexplained Gap 2013
AT	-0.16	-0.35	-0.09	-0.30
BE	-0.16	-0.06	-0.10	0.00
BG	**0.02**	**0.02**	**0.01**	**0.02**
CH	n.a.	-0.38	n.a.	-0.40
CY	-0.33	-0.71	-0.30	-0.60
CZ	-0.22	-0.33	-0.05	-0.15
DE	-0.50	-0.61	-0.49	-0.56
DK	-0.22	-0.03	-0.14	-0.02
EE	-0.25	-0.57	-0.17	-0.40
EL	-0.18	-0.31	-0.13	-0.29
ES	-0.21	-0.54	-0.15	-0.40
FI	-0.24	-0.21	-0.18	-0.10
FR	-0.23	-0.19	-0.16	-0.19
HR	n.a.	-0.15	n.a.	-0.21
HU	**0.02**	**0.35**	**0.03**	**0.24**
IE	-0.32	-0.48	-0.30	-0.43
IS	-0.21	n.a.	-0.12	n.a.
IT	-0.34	-0.52	-0.30	-0.48
LT	-0.21	-0.22	-0.15	0.00
LU	-0.57	-0.41	-0.44	-0.27
LV	-0.36	-0.49	-0.25	-0.29
MT	-0.27	-0.26	-0.25	-0.21
NL	-0.34	-0.12	-0.32	-0.13
NO	-0.43	-0.10	-0.45	-0.08
PL	-0.21	-0.16	-0.15	-0.07
PT	-0.18	-0.11	-0.17	-0.03
RO	**0.14**	**0.04**	**0.14**	**0.05**
SE	-0.21	-0.01	-0.13	0.01
SI	-0.22	-0.19	-0.15	-0.06
SK	-0.21	-0.25	-0.13	-0.17
UK	-0.28	-0.42	-0.20	-0.34

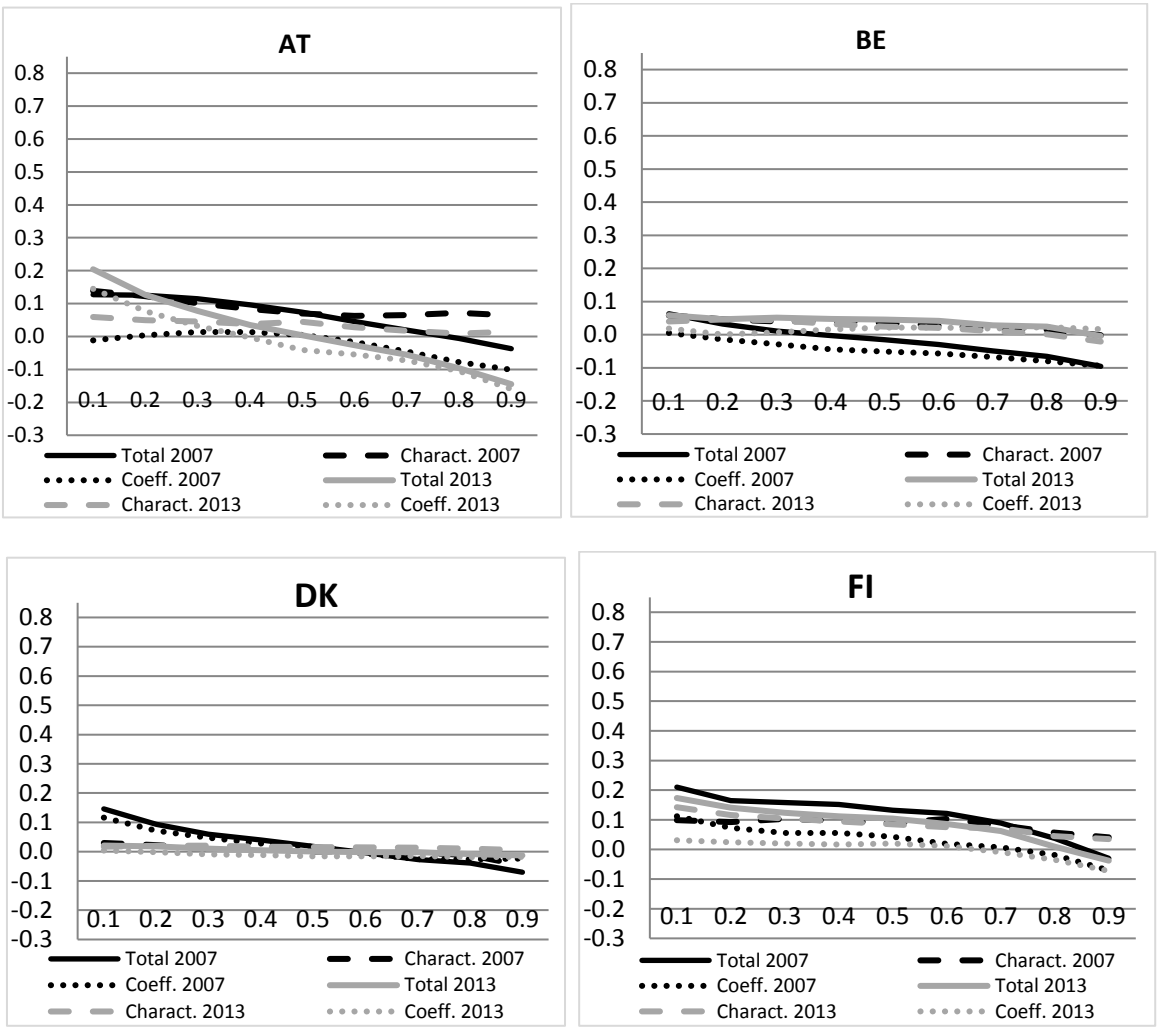
Source: Author's estimates based on quantile decomposition results (See Appendix Table A10 for detail decomposition results, standard errors and confidence intervals).

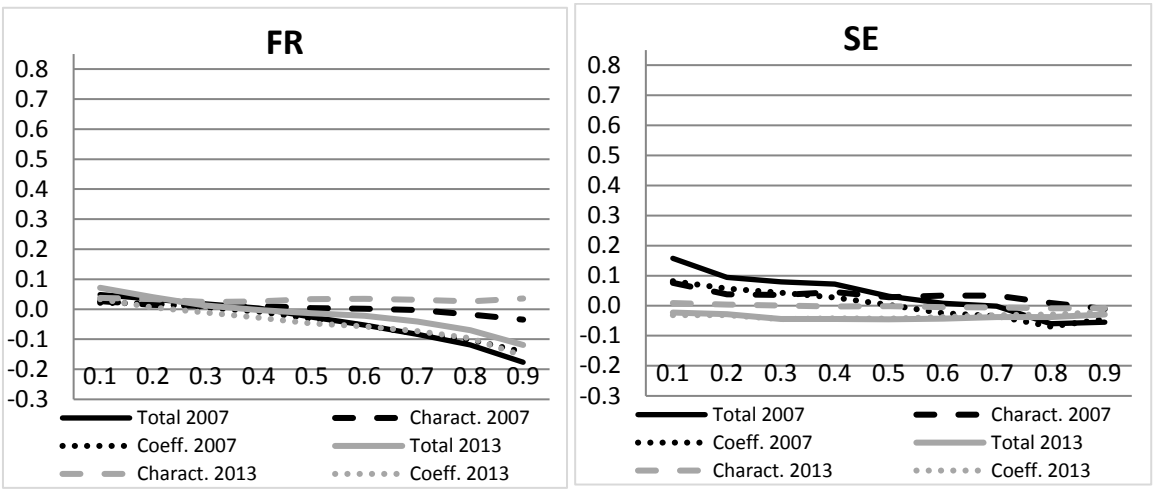
The full quantile functions are provided in the figures that follow. To facilitate the analysis, in Figures 2a to 2d we divide countries into groups based on the 2007 size of the pay gap at the median (**H**igh or **L**ow), and the initial steepness of the generally negatively sloping quantile functions (**S**teep or **F**lat). A fifth group deals with the small number of countries that have positively sloped quantile functions (Figure 2e).

*5.2.1 Low gap at the median – Flat, negative, quantile functions (**LF**, Figure 2a)*

For the majority of the low gap countries, there are no particular changes along quantiles when comparing 2007 with 2013. In BE, DK, FR and SE, there is less inequality across quantiles in 2013, compared to 2007 (light grey line flatter than the black line), while inequality increased in AT. Note that, for some countries in this group (DK, SE and BE) the pay gap line across quantiles becomes almost completely flat.

Figure 2a: Quantile Decomposition Results for 2007 and 2013 (LF)

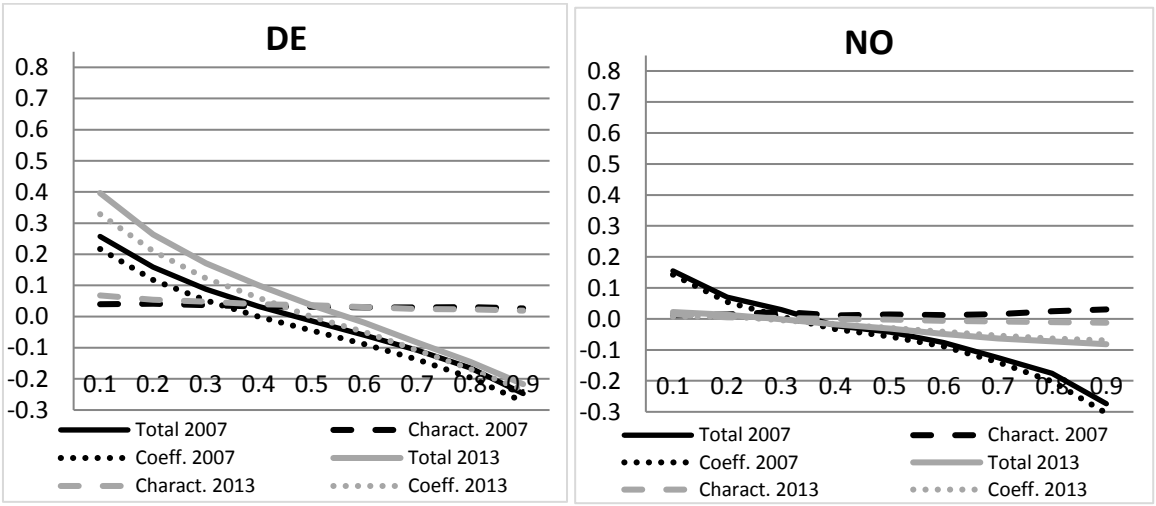


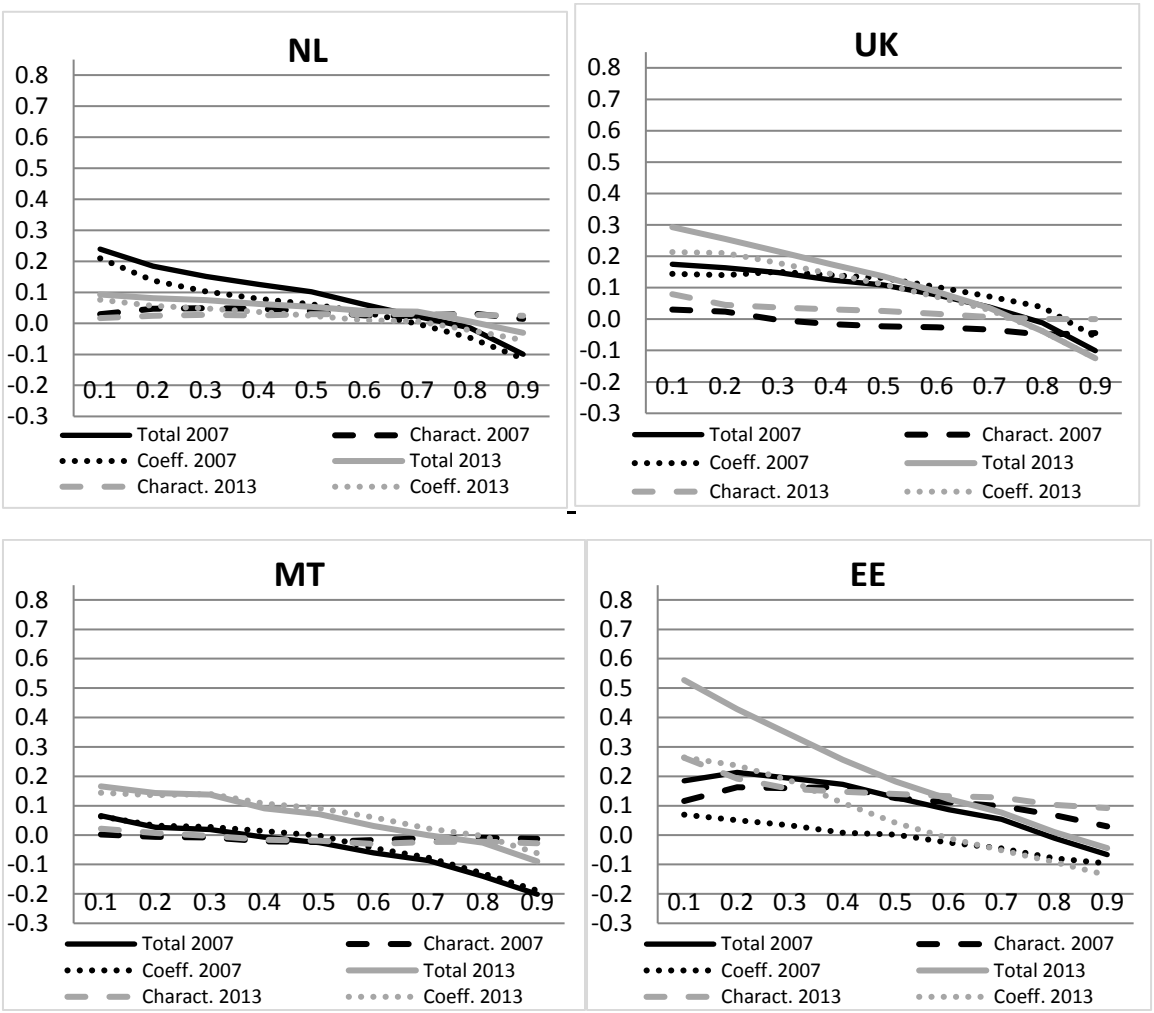


*5.2.2 Low gap at the median, Steep, negative, quantile functions (**LS**, Figure 2b)*

In some cases, even the low gap-at-the-median countries have differences in the wage gap along the distribution. For example, DE and the UK have a much larger wage gap in favour of the public sector at the lower quantiles, while at the higher quantiles, public sector employees seem to incur a wage penalty. Note that this wage gap is fully unexplained since the difference in the characteristics line is almost flat. When comparing income years 2007 and 2013, inequality across quantiles increased in DE, EE and the UK. In the UK, this might be explained by the fact that the wage freeze in the public sector was applied only to those above some income level. For EE the increase in the mean wage, shown in Figure 1a, seems to be driven by an increase in the gap for the lower quantiles. On the other hand, the gap line becomes very flat for NO and NL. For MT, the small increase in the median gap in Figure 1 seems to hold for all quantiles, thus no change in the slope of the quantile function can be discerned.

Figure 2b: Quantile Decomposition Results for 2007 and 2013 (LS)

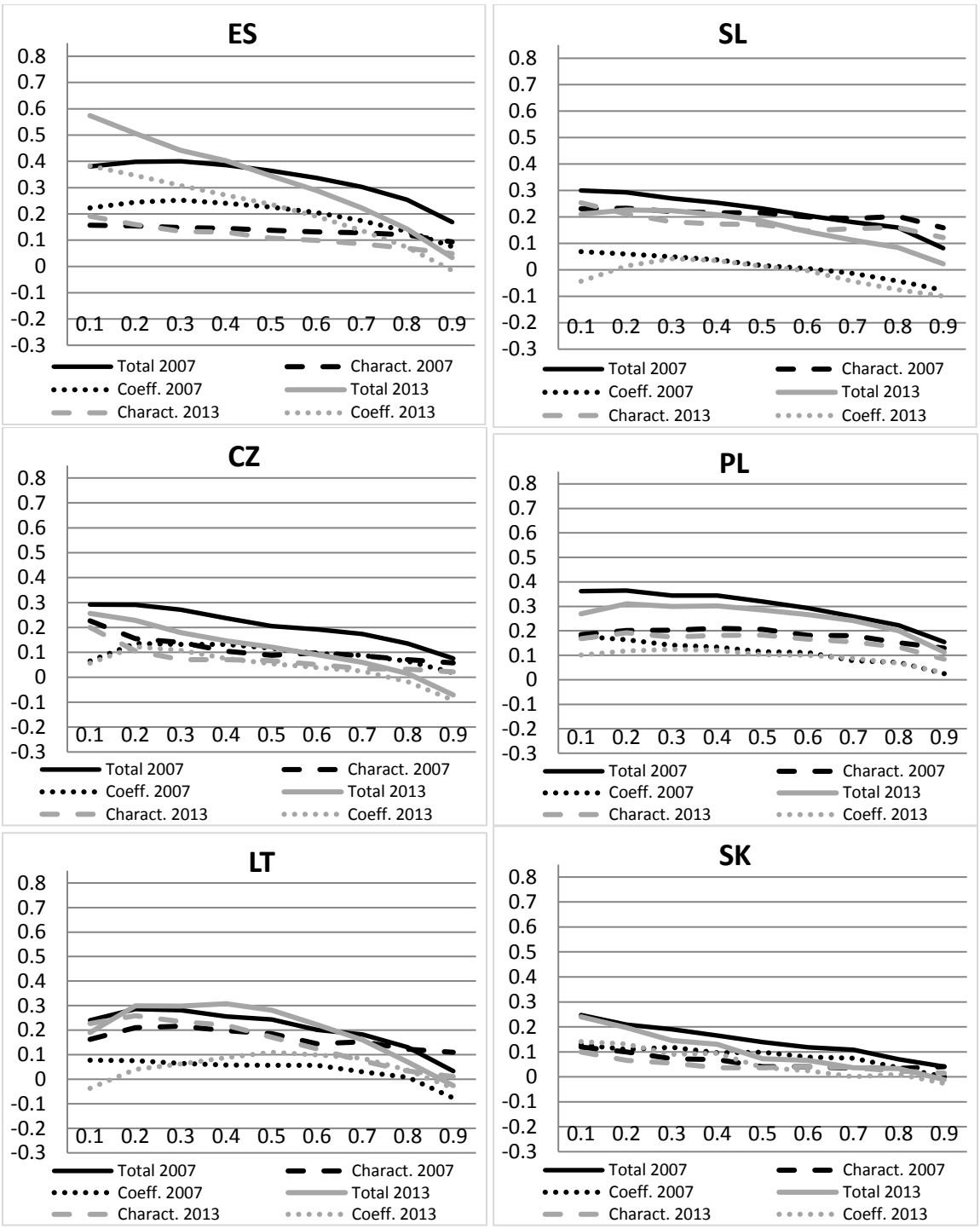


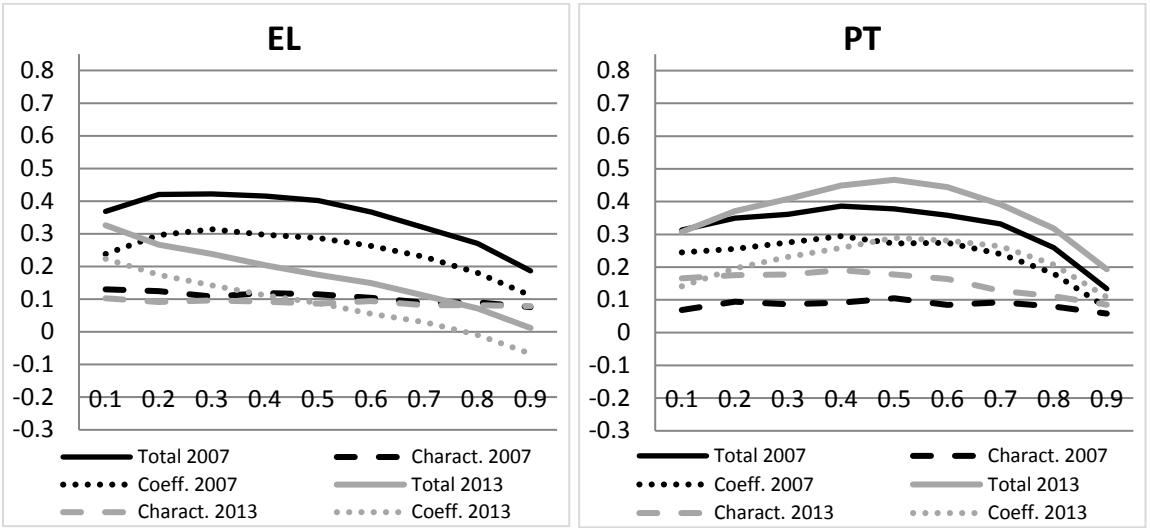


*5.2.3 High/medium gap at the median- Flat, negative, quant. func. (**HF**, Figure 2c)*

For these high gap flat quantile functions countries (Figure 2c), the differences among quantiles in 2007 are approximately 0.2 ln wage points. For countries that adopted pay cuts for the high wage earners, like ES or the CZ, we observe a significant decline in the pay gap at the high end of the wage distributions. ES is perhaps the most prominent example of a country where the protection provided to the low earners of the public sector actually increased the gap for the low wage earners due to the reduction of wages in the private sector; at the same time, the public-private pay gap for the high earners decreased. PT is the only country where the pay gap after the crisis slightly increases for almost all quantiles. This change seems to be explained by changes in the distribution of characteristics, while for all other countries, the observed characteristics are generally stable over time, as expected.

Figure 2c: Quantile Decomposition Results for 2007 and 2013 (HF)

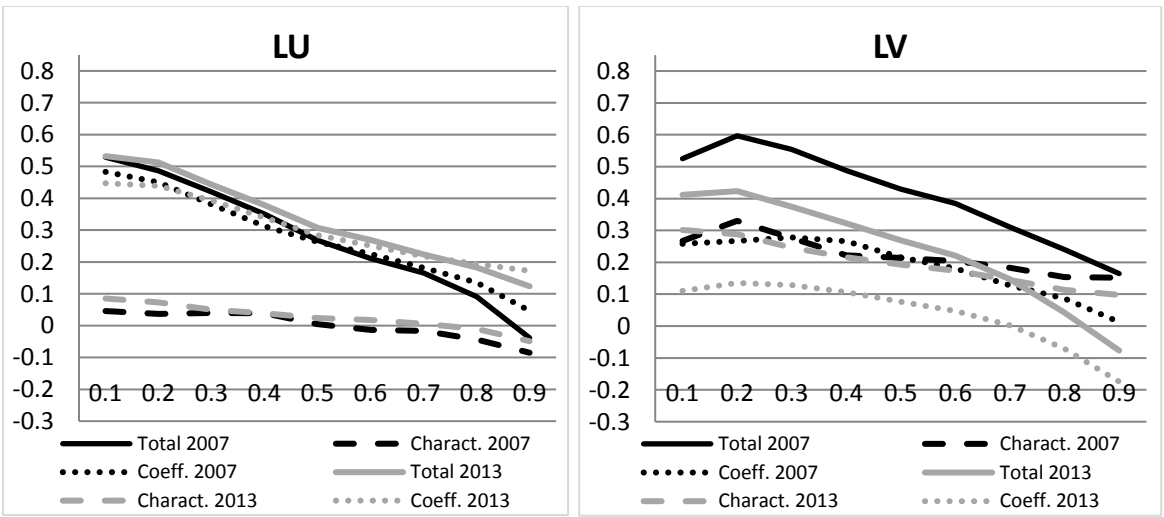


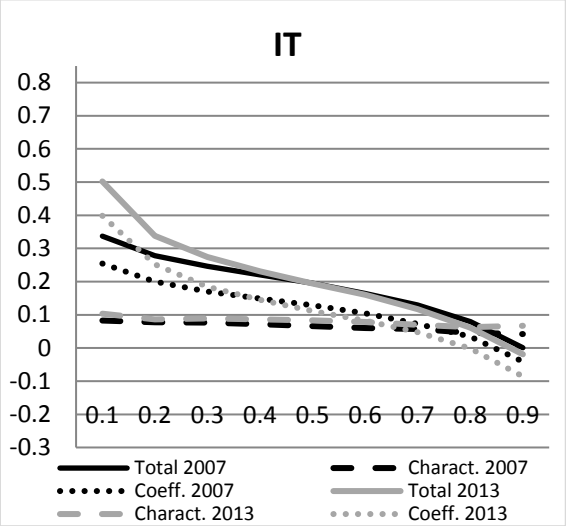


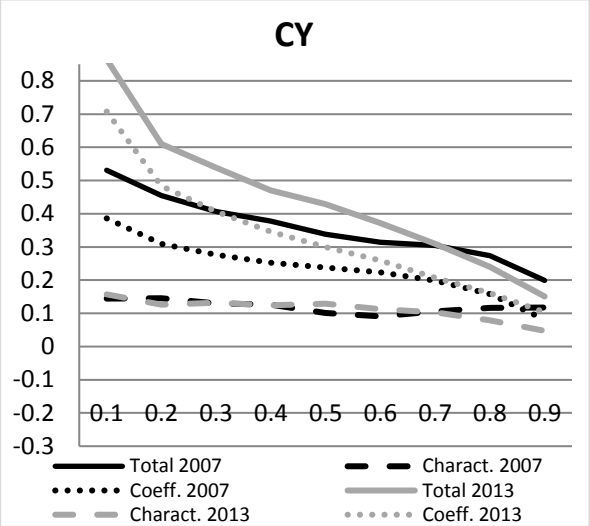
*5.2.4 High/medium gap at median, Steep, negative, quantile funct. (**HS**, Figure 2d)*

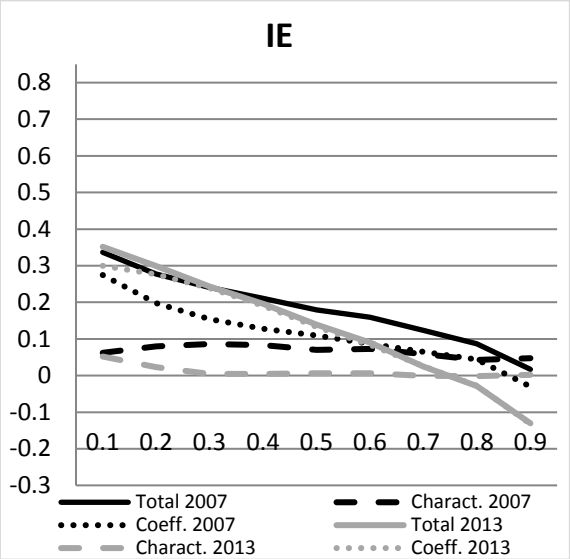
Most high gap countries at the median, have much larger gaps at the lower end of the wage distribution than at the top. In addition, higher total gaps are driven by differences in the unexplained gap (coefficients) for most countries, while the distributions of characteristics for the two sectors are generally more similar. Among the high gap countries, the largest inter-quantile differences in the 2007 pay gap in ln points are observed in LU (0.57), LV (0.360), IT (0.336), CY (0.332) and IE (0.320) — see Table 4 for the inter-quantile differences. As shown in Figure 2d, for these countries, the gap diminishes sharply as we move to higher quantiles. Note that in LV, these differences are preserved in 2013, even though the gap is significantly reduced (same reduction for all quantiles). For CY, IE and IT, we observe a change in the slope of the pay gap line in 2013 (pivots clockwise), indicating that the gap becomes lower for the highly paid or higher for the low paid. It is worth noting that in these countries the public sector pay cuts were applied in a progressive manner.

Figure.2d: Quantile Decomposition Results for 2007 and 2013 (HS)





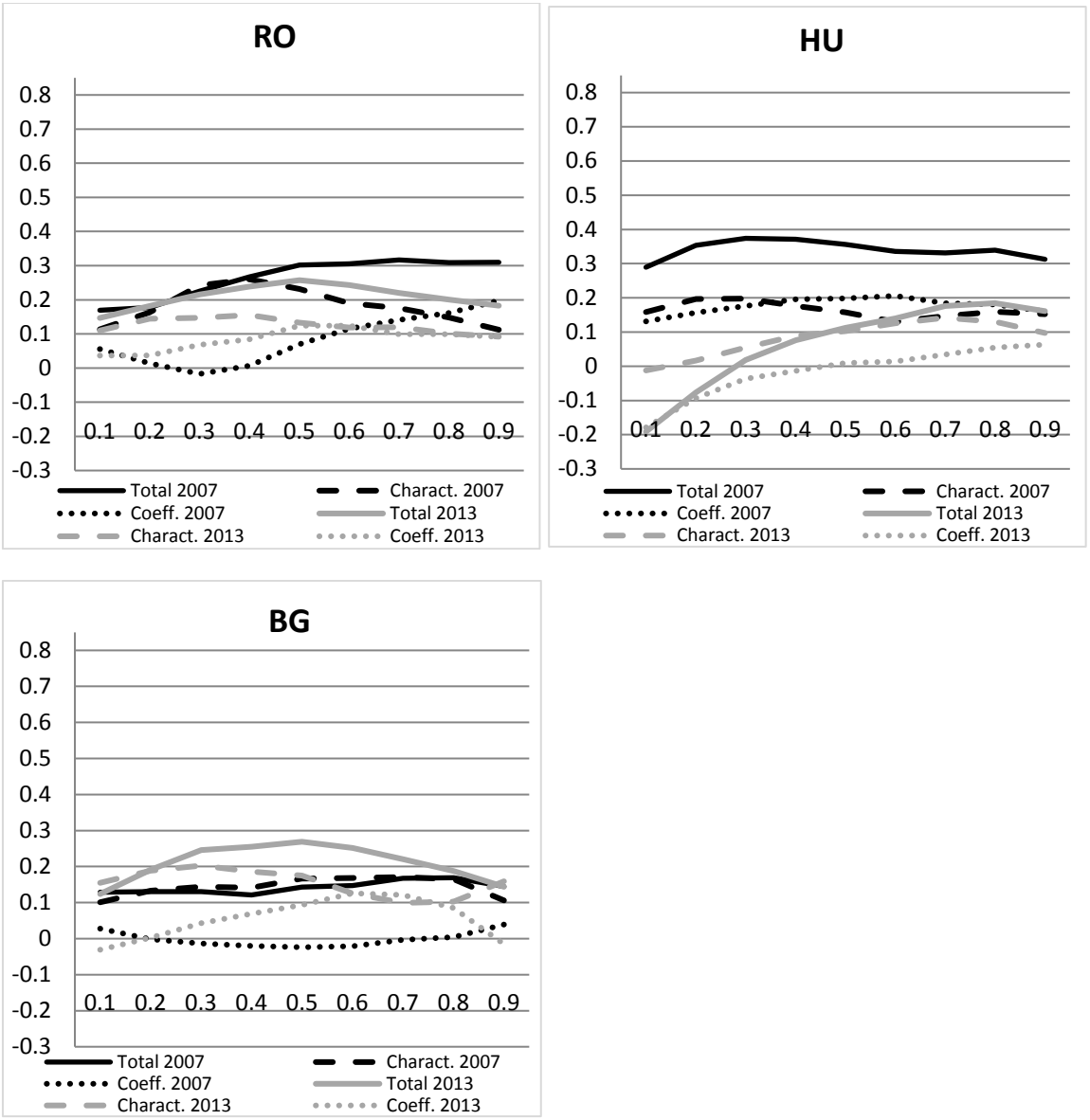




5.2.5 Positively sloping quantiles (Figure 2e, PVE)

In 2007, three countries exhibited no particular difference (BG and HU), or actually increasing pay gaps along the wage distribution (RO). These are all Eastern European countries with very low wages offered. For RO and HU, a big portion of the public sector employees were actually paid at the minimum wage. For HU, even though there was a reduction of the gap at the mean, the quantile analysis indicates that inequality increased considerably after the crisis. This is the only country where the low-paid public sector employees paid a wage penalty, perhaps as a result of the complete abolition of the thirteenth salary and other regressive measures that were adopted during 2009-2010.

Figure 2e: Quantile Decomposition Results for 2007 and 2013 (PVE)



The quantile results presented above are used in the context of the panel analyses in section 5.3 which consider the impact of the variables Freeze and Cut on the pay gap at the median, at the 10th and the 90th quantiles, as well as for the difference between the top and bottom quantiles.

5.3 The Impact of public sector reforms on the public-private pay gap

The measures and policies targeting the public sector reviewed above were, in many cases, accompanied by endogenous reactions in the private sector. Indeed, in some cases, the private sector reacted faster and with more intensity than the public sector. The combination of the policy changes in the public and the endogenous adjustments in the private sector meant that the impact on the public-private sector pay gap cannot be based on the nature

of the public sector reforms alone. In this section, we investigate the impact of these combined changes on the public-private sector wage gap.

To do so, we code the measures taken (described in the Appendix Table A2 and summarized in Table 1) under two main variables: $Freeze_{i,t}$ which, for each country i, equals one if a public sector wage freeze was in effect in year t and similarly for the variable $Cut_{i,t}$ if pay cuts were adopted. Otherwise these two variables equal zero. Note that in cases where the pay cut for country i was adopted in the last quarter of year t, variable $Cut_{i,t}$ was set equal to zero and $Cut_{i,t+1}$ was set equal to 1, since the effect of the cut will not be felt in year t. An example of the dataset with the measures taken is provided in Table 5 for the case of Italy (IT). The full coded table appears as Appendix Table A13.

Table 5: An Example of the Dataset

Country	Year	Freeze	Cut
IT	2007	0	0
IT	2008	0	0
IT	2009	0	0
IT	2010	1	1
IT	2011	1	0
IT	2012	1	0
IT	2013	1	0

To begin with, we investigate the impact of Freeze and Cut on the *unexplained* public-private wage gap resulting from the OR decompositions, using two main approaches. We focus on the unexplained gap because (i) as argued in the introduction, it is generally economically more appropriate to reduce the unexplained gap than that explained by productive characteristics such as education, and (ii) because the discussion in section 5.1 suggested that this was often the politically palatable approach adopted during the crisis. We return to an analysis of the impact of the crisis on the total gap as a robustness check. For each country, we estimate:

(i) A static OLS equation using country and time fixed effects based on the specification in equation (4):

$$Gap_{i,t} = b_0 + b_1.Freeze_{i,t} + b_2.Cut_{i,t} + a_i + T_t + u_{i,t}, \text{ and} \qquad (4)$$

(ii) A dynamic panel equation which allows for a temporal dependence between $Gap_{i,t}$ and $Gap_{i,t-1}$, as in equation (5):

$$Gap_{i,t} = b_0 + b_1.Gap_{i,t-1} + b_2.Freeze_{i,t} + b_3.Cut_{i,t} + a_i + T_t + u_{i,t} \qquad (5)$$

The second equation is estimated using the method developed in Arellano and Bond (1991). This removes the fixed effects by first differencing and corrects for the possible correlation

of the lagged dependent variable with the error term, using further lags as instruments. Estimation proceeds with the Generalised Method of Moments (GMM) which is suited for situations with a few years and many countries.

The results obtained for the fixed effect and dynamic panel models are presented in Table 6, which is set up to also accommodate the quantile regression results that will be discussed next. For the moment, the relevant columns in Table 6 are column 2 for fixed effect and columns 7 and 8 for dynamic panel estimates. The three columns refer to results at the median.

The results in columns 2, 7 and 8, Table 6, show that a pay cut has a negative and significant effect in all three specifications, while a pay freeze is not significant in any of the three specifications. This implies that government freezes did not have an impact on public sector pay that exceeds that engineered endogenously in the private sector, with the result that the pay gap remains largely unaffected.

Hypothesis tests show that the time fixed effects are jointly significant.[12] Thus year heterogeneity should be taken into account in a country fixed effects panel regression. Looking at the year dummies, years 2008-2010 generally have positive coefficients, implying a higher public-private pay gap compared to 2007, presumably because of the private sector downward pressure on wages, which would have been particularly intense during the early part of the international crisis. Over the period 2011-2013, the time effects tend generally to be negative compared to 2007. Note however, that only in 2012 is the unexplained pay gap significantly lower than the 2007 one in column 2, Table 6.

Arellano and Bond (1991) estimates in columns 7 and 8, Table 6, result in similar findings regarding the impact of Freeze and Cut, but with a more negative coefficient, significant at the 1% level, on the impact of Cut (-0.02** in column 2 vs. -0.032*** in column 8). The lagged gap is only significant when time effects are also included and then only at the 10% significance level. This suggests that the dynamics involved, while present, are not very powerful. Note that our dependent variable is the unexplained gap. Estimates for the total gap are also performed as a check and are generally similar in sign and size (see Appendix Table A11).

The consistency of the GMM estimator hinges on the assumption that there is no autocorrelation in the first differenced errors. Arellano and Bond (1991) propose a test of the null hypothesis that all second-order auto-covariances for all periods are zero, i.e. E($\Delta u_{it}, \Delta u_{it-2}$)= 0 for all i. Note that the test does not require that E($\Delta u_{it}, \Delta u_{it-1}$)= 0. In our estimates, for both AB(1) and AB(2) specifications, we reject the null hypothesis of

[12] F(6,30)=4,08 and the p-value of the F test=0.004.

autocorrelation in first differenced errors of order 2 (See AB test 2 in Table 6). Thus, there is no evidence of model misspecification.[13]

Turning to the effects of Freeze and Cut on the 90th quantile, these are unambiguously negative and, in the Arellano and Bond (1991) specification (column 10, Table 6), statistically significant at least at the 10% level and generally at the 5% level. The effects on the 10th quantile in columns 1, 5, and 6, Table 6, are significantly positive for Freeze at least at the 10% level; they are negative for Cut but not significant. The impact on the public sector gap at the 90th *minus* the 10th quantile is unambiguously negative for both Freeze and Cut but only Freeze produces coefficients which are significant at the 1% level.

As a robustness check to this analysis, all of the estimations described in Table 6 were repeated using a balanced panel of 25 countries, for all 7 years each, instead of all 31 countries for all the years available. From these estimates the following countries were removed from the dataset: BE, IE, IS, HR, NO and CH. As can be seen in Appendix Table A12, the same conclusions as those derived above hold.

These findings justify the effort involved in probing into the quantile architecture of the public-private wage gap. It is clear that the gap, which is generally higher at low quantiles, was not only protected but probably increased, while the opposite is true at the top end of the distribution. A definite twist in the quantile function appears to have been effected.

[13] The Sargan test is not used, due to the presence of heteroscedasticity, for which we correct, using robust standard errors.

Table 6: Impact of Freeze and Cut on Public-Private Sector Pay Gap: At Median and Other Quantiles, Fixed Effect and Dynamic Panel

	Fixed effects				Arellano Bond						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Unexplained Gap	FE_q10	FE	FE_q90	FE_q90-q10	AB_q10	AB_q10	AB	AB	AB_q90	AB_q90	AB_q90-q10
freeze	0.039**	0.013	-0.024	-0.063***	0.022*	0.025*	-0.004	0.008	-0.025**	-0.024**	-0.035***
cut	-0.009	-0.020**	-0.019	-0.010	-0.012	-0.005	-0.031***	-0.032***	-0.016*	-0.019**	-0.010
yr2008	-0.007	0.005	0.012	0.018		0.008		0.016**		0.012	0.010
Yr2009	-0.001	0.010	0.016	0.017		0.010		0.020***		0.018	0.011
Yr2010	-0.031	0.007	0.024	0.055**		-0.017		0.017**		0.021*	0.037**
Yr2011	-0.038*	-0.008	0.010	0.048		-0.007		0.005		0.008	0.020
Yr2012	-0.033	-0.020*	0.002	0.035		0.000		-0.003		0.003	0.006
Yr2013	-0.027	-0.022	-0.002	0.025							
Lagged Unexpl. Gap					0.285	0.392**	0.397	0.368*	0.141	0.177	0.109
Constant	0.153***	0.072***	-0.033***	-0.186***	0.096**	0.080**	0.047**	0.036**	-0.018	-0.026*	-0.157***
Observations	209	209	209	209	142	142	142	142	142	142	142
R-squared	0.067	0.162	0.084	0.091							
Number of countries	31	31	31	31	31	31	31	31	31	31	31
R-squared- within	0.067	0.162	0.084	0.091							
R-squared- between	0.035	0.005	0.112	0.003							
R-squared- overall	0.030	0.015	0.001	0.019							
F(8,30)	1.45	4.39	2.71	1.72							
F-test (P-value)	0.218	0.001	0.022	0.134							
AB test 1 (z test)					-2.01	-2.80	-2.10	-2.63	-1.88	-1.99	-1.33
AB test 1 (p-value)					0.04	0.01	0.04	0.01	0.06	0.05	0.19
AB test 2 (z-test)					-0.93	-0.69	-0.14	-0.27	-0.06	0.20	-1.53
AB test 2 (p-value)					0.35	0.49	0.89	0.79	0.95	0.98	0.13
No. instruments					18	23	18	23	18	23	23

*Notes: (1) Robust standard errors are calculated; (2) *, **, *** significant at the 10%, 5% and 1% level, respectively.*

6 Conclusions

In this paper, we study the evolution of the pay gap between the public and private sectors of 31 European countries over the income years 2007 to 2013 (i.e. EU SILC Surveys 2008 to 2014). We do so, both at the mean, using the standard OR decomposition, and at different quantiles using the method proposed by Chernozhukov et al (2013). In addition, we investigate the impact of the austerity measures adopted in the public sector on the public-private wage gap, using both a static fixed effects model and the Arellano and Bond (1991) dynamic panel method. To perform this analysis, major effort was devoted to collecting and coding the public sector wage austerity measures in the large number (up to 31) of European countries that are included in the EU SILC dataset. The measures were coded into two discrete variables, namely Freeze and Cut, in order to avoid errors that would almost certainly contaminate continuous versions of Cut. While there do exist careful individual-country studies and a limited number of studies concerned with several countries at the same time, this is the first paper which is exclusively devoted to uncovering the impact of the recent crises on the pay gap for so many European countries and which explores so many facets of the issues involved econometrically.

During the period under study, European governments under external pressure (particularly in Programme countries) or under the spectre of deteriorating economic conditions, managed to implement pay cuts or other changes in the public sector with significant negative impacts on gross and/or net pay. Because of the international crisis, which was often magnified by country-specific problems, it was politically possible to bypass traditional wage-setting procedures: Gross pay cuts, pay freezes, various charges or taxes which reduced net wages, and/or other public sector reforms, were implemented. In the absence of endogenous adjustments in the private sector, the public-private wage gap would certainly have been lower in the countries that adopted such measures. Depending on the speed and extent of the wage cuts in the private sectors during these crises, that is on the country-specific degree of private sector wage flexibility, our estimated coefficients on the variables Freeze and Cut present the combined effect of the public sector reforms and the endogenous private sector adjustments. They, therefore, represent the *minimum* impact on the gap of the public sector austerity measures.

Decompositions at the mean showed that 14 countries, including all the Nordic and Central European ones, had a low or insignificant pay gap in 2007 (Figure 1a) and 9 of them (Table 1) did not adopt any public sector measures during the following years. On the other hand, among the top gap countries in 2007 (Figure 1c) were countries that were forced to apply for external financial assistance sometime during the period under study (CY, EL, ES, PT,

HU, LV, and RO). Ireland, a medium-gap country (Figure 1b), was also the recipient of external financial help.

Regarding the change in the unexplained gap between 2007 and 2013, a variety of experiences can be discerned. Of the 9 countries that did not adopt any public sector reforms, 4 countries (BE, DE, MT, and NL) experienced an increase in the public-private sector pay gap and 5 (DK, FR, FI, NO, and SE) a decrease (Table 3). The former may have had more flexible private sector institutions or may have experienced more adverse shocks in the private sector. The 19 countries that did adopt some sort of public sector measures, divide into the 8 countries that experienced an increase in the public-private pay gap (AT, BG, CY, EE, ES, IT, LT and LU) and 11 where it declined (CZ, EL, HU, IE, LV, PL, PT, RO, SI, SK, and UK). For the remaining 3 countries (CH, HR, and IS), there was no information in the dataset for one of the years 2007 and 2013.

Looking at the individual country decomposition estimates by year, the impact of public sector reform was ephemeral in countries like RO, where the pay cuts were resisted. On the other hand, in countries where the measures were related to deep structural reforms, such as abolishing benefits, changing pay scales, etc., they should have a more permanent effect on the public-private sector wage gap (e.g. EL).

Similar heterogeneity exists in the impact of public sector reforms on the quantile wage functions of the countries studied. With the exception of BG, HU and RO, all other countries have a negative quantile function slope,[14] implying that the lowest paid public servants are better paid than similar colleagues in the private sector, while this is not necessarily true for the more highly paid. The inter-quantile differences can be large even in countries with low pay gaps at the median (e.g. DE, MT, NO, NL, UK in 2007). At the top end of the wage distribution, the gap can even be negative, implying that top civil servants can often do better in the private sector. Reforms which shielded the lowest-paid public servants twisted the wage distribution in their favour and, in some cases, drove the top of the wage distribution (including the portion attributed to characteristics) even further into the negative territory. Notable cases include ES and IE.

Programme countries, which as noted above, tended to have high initial public-private pay gaps, displayed a variety of responses during the period studied: EL and IE are examples of countries where the pay gap declined, in EL very substantially. In PT, the pay gap declined somewhat only at the beginning of the external intervention, increasing again thereafter. In countries receiving other external support a mixed picture prevailed, with ES

[14] On this issue, see Anton and de Bustillo (2015).

and RO experiencing temporary reductions in the pay gap and HU and LV reducing both the unexplained and total gaps noticeably until the end of 2013.

Our estimates, which are robust to definitions of the pay gap other than the unexpected one, to estimation based on a balanced panel, and to the panel method used, suggest that public sector freezes and cuts had a negative and significant impact on the unexplained public-private sector pay gap. This was particularly evident at the median and at the 90th quantile. At the 10th quantile, the impact of the measures on the gap were statistically weaker but, if anything, positive. This suggests that private sector cuts were severe, increasing the pay gap between the two sectors for the low-paid.

These results raise important issues for public policy. A negative public-private sector wage gap at the high end of the wage distribution, particularly in characteristics, may lead highly skilled workers to search for a position in the private sector and thus the public sector may lose highly qualified personnel (Bradley et al (2014), Gomes (2016)). An unjustified pay penalty against highly paid public sector personnel may also lead to inefficient allocations (Cavalcanti and dos Santos (2015), and Gomes (2015, 2016)). At the other end of the wage distribution, an unjustified increase in the public-private pay gap for the lowest-paid public servants, beyond the implied inefficiencies, may also lead to upward wage pressures in the private sector, with deleterious effects on a country's competitiveness even as the gap closes.

Obviously, economic conditions are constantly changing and in order to keep the public-private sector wage gap at appropriate levels across the quantile function, countries should consider adopting wage setting mechanisms linked to the private sector wage growth (Gomes (2015, 2016)); the offered wage across quantiles is not the best mechanism for redistribution. Interestingly, in AT, for example, the growth of private sector wages is taken into account during the bargaining process for public sector wages. Wage setting mechanisms in the public sector should be capable of making distinctions that recognise important worker or job characteristics, such as the level of education and the occupational category (also suggested by Gomes (2016)), in order to maintain appropriate public-private sector pay gaps at all quantiles.

Of course, more aggressive adjustments may occasionally be necessary in cases where the public-private pay gap is deemed to be unjustifiably high. These occasional relative adjustments to public sector wages may not always be in the downward direction: For instance, DE appears to have corrected a 2007 negative unexplained (and total) public-private sector pay gap by 2013.

Our study of a turbulent period that, in some countries, involved dramatic interventions in the prevailing wage-setting mechanisms, provides a wealth of information on public-private pay gap outcomes; this knowledge, drawn from comparable data and methods of analysis for 31 European countries, should be of value to researchers and policy makers alike.

References

Antón, J-I, Muñoz de Bustillo R (2015) Public-private sector wage differentials in Spain. An updated picture in the midst of the Great Recession. Investigacion Economica, Vol.LXXIV, No. 292, 115-157.

Arellano M, Bond S (1991) Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations, The Review of Economic Studies, Vol. 58, No. 2 (Apr., 1991): 277-297.

Blinder, AS (1973) Wage discrimination: Reduced form and structural estimates, Journal of Human Recources, 8 (4): 436-455.

Bradley J, Postel-Vinay F, Turon H (2014) Public sector wage policy and labour market equilibrium: A structural model, forthcoming, Journal of European Economic Association.

Cavalcanti T, Rodrigues dos Santos M (2015) (Mis) Allocation effects of an overpaid public sector, REAP Rede de Economia Aplicada Working Paper 82.

Campos M, Papapetrou E, Depalo D, Perez J, Ramos R (2017) Understanding the public sector pay gap, IZA Journal of Labour Policy 6:7.

Chernozhukov V, Fernandez-Val I, Melly B (2013) Inference on counterfactual distributions, Econometrica, Vol.81 No.6 (November): 2205-2268.

Christofides LN, Michael M (2013) Exploring the public-private sector wage gap in European countries. IZA Journal of European Labor Studies 2:15.

Christopoulou R, Monastiriotis V (2015) Public-private wage duality during the Greek crisis, Oxford Economic Papers: 1-23.

COCOPS (2013) Public Sector Reform in Estonia: Views and Experiences from Senior Executives, Country Report.

De Castro F, Salto M, Steiner H (2013) The gap between public and private wages: new evidence for the EU, European Economy, Economic Papers 508.

Depalo D, Giordano R, Papapetrou E (2015) Public-private wage differentials in euro-area countries: evidence from quantile decomposition analysis, Empirical Economics 49: 985-1015.

Dickson M, Postel-Vinay F, Turon H (2014) The lifetime earnings premium in the public sector: The view from Europe, Labour Economics 31: 141-161.

Firpo S, Fortin NM, Lemieux T (2009) Unconditional quantile regressions, Econometrica, 77: 953-73.

Fortin N, Lemieux T, Firpo S (2011) Decomposition methods in economics. in Ashenfelter, O. and D. Card (eds) Handbook of Labor Economics 4: 1-102.

Giordano R, Depalo D, Pereira MC, Eugene B, Papapetrou E, Perez J, Reiss L, Roter M (2011) The public sector pay gap in a selection of euro area countries. European Central Bank Working Paper, No.1406.

Gomes P (2015) Optimal public sector wages, The Economic Journal 125: 1425-1451.

Gomes P (2016) Reforming the public sector's wage policy, In: A. Philippopoulos (Ed), Public sector economics and the need for reforms, CESifo Seminar series, The MIT Press, Cambridge, Massachusetts, London, England.

Hospido L, Benito EM (2016) The public sector wage premium in Spain: Evidence from Longitudinal Administrative Data, Labour Economics 42, 101-122.

Machado J, Mata J (2005) Counterfactual decomposition of changes in wage distributions using quantile regressions. Journal of Applied Econometrics 20: 445-465.

Nikolic J, Rubil I, Tomic I (2017) Pre-crisis reforms, austerity measures and the public-private wage gap in two emerging economies, Economic Systems 41:2, 248-265.

Oaxaca R (1973) Male-female wage differentials in urban labour markets, International Economic Review, 14 (3): 693-709.

Oaxaca R, Ransom M (1994) On discrimination and the decomposition of wage differentials. Journal of Econometrics 61: 5–21.

Postel-Vinay F (2015) Does it pay to be a public-sector employee? IZA World of Labour: 156.

Ramos R., Sanroma E, Simon H (2014) Public-private sector wage differentials by type of contract: Evidence from Spain, IZA Discussion Paper Series No. 8158.

Yun M (2005) A simple solution to the identification problem in detailed wage decompositions. Economic Enquiry 43: 766-772.

Appendix

Country	2008			2014		
	Private	Public	Total	Private	Public	Total
AT	1,740	269	2,009	1,688	286	1,974
BE	1,797	438	2,235	1,711	377	2,088
BG	1,654	243	1,897	1,926	259	2,185
CH	n.a.	n.a.	n.a.	1,954	199	2,153
CY	1,689	303	1,992	2,012	401	2,413
CZ	4,760	504	5,264	3,281	418	3,699
DE	3,775	897	4,672	3,388	821	4,209
DK	3,339	169	3,508	1,088	166	1,254
EE	1,986	243	2,229	2,229	347	2,576
EL	1,897	492	2,389	1,725	492	2,217
ES	4,545	985	5,530	3,674	766	4,440
FI	4,891	489	5,380	4,834	423	5,257
FR	3,470	865	4,335	3,616	627	4,243
HR	n.a.	n.a.	n.a.	1,963	239	2,202
HU	3,023	464	3,487	3,041	633	3,674
IE	1,240	272	1,512	1,538	266	1,804
IS	1,694	188	1,882	n.a.	n.a.	n.a.
IT	5,265	1,149	6,414	5,468	956	6,424
LT	2,015	274	2,289	1,932	241	2,173
LU	1,780	198	1,978	1,640	316	1,956
LV	2,003	355	2,358	2,141	323	2,464
MT	1,106	210	1,316	1,466	372	1,838
NL	3,547	273	3,820	1,272	235	1,507
NO	3,117	124	3,241	1,870	293	2,163
PL	4,442	692	5,134	4,153	691	4,844
PT	1,330	284	1,614	2,482	418	2,900
RO	2,558	220	2,778	2,531	261	2,792
SE	3,679	124	3,803	921	122	1,043
SI	5,724	680	6,404	4,636	603	5,239
SK	2,780	704	3,484	2,727	712	3,439
UK	2,883	492	3,375	3,284	421	3,705
Total	**83,729**	**12,600**	**96,329**	**76,191**	**12,684**	**88,875**

Note: Public is defined as NACE code Public Administration L for 2008 and code O for 2014. Private does not include the Education sector and specific low skilled occupations for which no equivalency holds with the public sector. Source: EU SILC 2008, 2014

Table A1. Employees in Sample by Country and Public/Private Status

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Austria (AT): Austerity Measures and Sources

Pay freeze was discussed for 2010, but social dialogue let to an increase of 1% #

Pay rise 0.85-2.1% (min increase for low paid workers) in 2011, 2012*

Pay freeze 2013##

Belgium (BE): Austerity Measures and Sources

2009-2013 wage increase each year based on price index ##

Other info:

2009-2011 decrease in employment by 10% in central government #

Union density in public is lower than total for 2003 (the only country)!!! ***

Bulgaria (BG): Austerity Measures and Sources

Pay freeze 2009-2011*

Pay freeze 2012, 2013 ##

Other info:

A new pay system in public administration has replaced traditional seniority-based pay with a system that takes more account of performance. #

Employment in central government fell by 12 %, between 2009- 2011. #

Cyprus (CY): Austerity Measures and Sources

Pay freeze in gross wages for public sector October 2011-2016*

Postpone wage indexation since 1/1/2012

Reduction in net wages through increased contributions for public sector sept 2011-2013 (Impose a special contribution for public sector employees progressively 0-3.5% (above 1500 until the end of 2011, above 2500 for 2012-2013 and above 1500 for 2013-2014), Impose a 3% contribution to Government Employees Pension Plan, Increase in the contribution to the Widows and Orphans Government Fund from 0.75-1.75% to 2% ,while in 2013 it became 3% etc.).@

In December 2012 until May 2013, gross monthly earnings were reduced based on the level of income (zero for less than 1000 euro, up to 12.5% for more than 4000). ## From June 2013, the cuts increased for all scales starting from 0.8% for the lower income group than 1000 euro per month. From 2014, onwards this increased even more.(Source: Government Treasury of Cyprus)

Other info:

Troika support €10 billion in 2013.The programme lasted until 2016, while from 2016-2029 CY is subject to post-programme surveillance.

Czech Republic (CZ): Austerity Measures and Sources

Pay cuts 4% in 2010, senior legal officials, other civil servants*

Pay cuts 10% in 2011, excluding teachers* #

Pay freeze 2011-2014* #

Germany (DE): Austerity Measures and Sources

Pay rise in 2010-2013* ##

Other info:

Increase in low-paid workers in the public sector both at national and municipal levels due to a greater incidence of fixed-term and part-time contracts. #

Pursue structural reforms in public sector at earlier years. # In 2005/2006 the social partners agreed a general reform and changed public sector payment based more on performance and less on seniority pay, but also with the introduction of a low-wage scale. Collective agreements are now on two levels: one for the Länder (TdL, 2006) and one for the municipalities and the Federal State (TVöD, 2005). Moreover, there is a separate directive for the civil servants

(Beamtenrecht, Besoldungsregelungen). In 2007 introduce performance-related pay for municipalities*1

Adjusted premium is higher at all points of the wage distribution in East Germany (Tepe and Kroos 2010). Apply the same wage level in East and West Germany for every wage group from 1st March 2010: +1.2%

Denmark (DK): Austerity Measures and Sources

Pay increase but less than inflation in 2010 #

Pay increase but remove seniority bonuses in 2011#

Pay rise 6.3% in 2012-2014* ##

Other info:

Pursue structural reforms in public sector at earlier years. #

Estonia (EE): Austerity Measures and Sources

Pay cuts 8-10%, general public and health in 2009*

Cuts 10 % in public administration in 2009, 2010 #

Pay cuts 15%, general public in 2010*

Pay freeze 2009, 2010 #, Pay freeze 2010-2014*

Abolition or reduction of performance related supplements and other additional payments #

Other info:

In the period 2008 to 2011, some reorganisation occurred in the areas of government, (in 7 out of 11 ministries the mergers of inspectorates and boards took place, more than twenty governmental organizations were abolished, seven new multifunctional agencies were established.) (Source: Public Sector Reform in Estonia: Views and Experiences from Senior Executives Country Report as part of the COCOPS Research Project 2013)

Greece (EL): Austerity Measures and Sources

Pay freeze (high paid >2000 per month), Nov. 2009*

Pay cut 12-20% (cut in allowances, cuts of 13th-14th salary) in March 2010, May 2010*, Impose an upper limit in civil servants pay, 2010###

Pay cuts: rationalize pay scales, abolish benefits, uniform base salary and stop evolution with seniority, 2011+++, Law 4024/2011 introduced a new remuneration regulation leading to a general pay reduction. The estimated reduction of nominal salaries ranged from 7% to 55%.

Increase in hours worked in 2011

Pay freeze 2011-2012*

Pay cuts 17% for 2012-2014* (reduce special remuneration in 2012##, abolish 13th and 14th salaries from the beginning of 2013) Under Law 4093/2012, the 13th and 14th monthly salaries were abolished and special remuneration was reduced.

Other info:

EU/Troika support €110 billion in 2010, €130 billion in 2012 and €86 billion in 2015 (The programme will last up to 2018)++

Public sector employees reduced #, promote early retirements in public sector, Non-renewal of temporary contracts +++

Decentralization of wage bargaining in 2011- annul the principle of the most favourable provision, according to which, enterprise level bargaining could only deviate upwards from the national agreement+++

Decrease minimum wages in 2012+++

Spain (ES): Austerity Measures and Sources

Nominal pay decreases on average 5% May 2010-2011 (higher for higher earners)* +

Pay freeze 2011,2012*$ #, Pay freeze 2013##

Nominal pay decreases on average 7% in 2012 (temporary removal of 14th salary) + #

Increase in hours worked in public sector in 2012 from 35 to 37.5 per week.

Other info:

Troika financial assistance 41.4 billion in July 2012 for bank recapitalization (exited the programme in Jan 2014). ++

Public sector employees reduced by 12% in 2011+

Finland (FI): Austerity Measures and Sources

Pay rise 1% 2010-2012*

Pay rise 1.9% in 2012 and in 2013##

France (FR): Austerity Measures and Sources

Pay increase but less than inflation (a freeze on the point index of civil service pay) 2010-2012 *

Increase in the social contribution pension equal to a 3.5 % loss in net wages #

Other info:

Pursue structural reforms in public sector at earlier years. #

Reduce the number of civil servants (75,000 jobs cut in 2008, 45,000 in 2009) by 5%

Croatia (HR): Austerity Measures and Sources

Pay cuts 10% for state officials, 5% cuts for public company managers, 2009 &

Base wage cut by 6%after the increase of wages by the same amount, so it is more like wage freeze in 2009 &

Cut in non-wage compensations such as Christmas and holiday bonuses, in 2010 &

Pay freeze 2012, 2013 ##

Abolish Christmas and holiday bonuses, 2012 &

Pay cuts by 3%, March 2013 &

Other info:

In general, government increased revenue instead of cutting expenses (e.g. increase VAT- "crisis tax") and public sector unions and social dialogue was continued. &

Hungary (HU): Austerity Measures and Sources

Pay increase in 2007 (half of the 13th salary of 2008, was paid in 6 instalments as an increase in 2007)*2

Pay cuts in 2008 (monthly wages return to the pro-increase level of 2007 and only half of the 13th salary was received in Jan. 2008)*2, - Pay cuts-lose their bonus temporarily, worth 8% in October 2008$

Abolition of 13th salary in general public, 2009*

Income tax reforms (net wage reductions), June 2010*,$

In 2010 two compensation instalments totalling a gross sum of (€ 353) would be paid (in February and April, respectively) to all employees earning a monthly wage less than (€ 1,224).

No pay cut, but bottom weighted compensation for low paid workers 2011*

Pay freeze 2009-2010

Other info:

EU/Troika support of €20 billion granted in October 2008. The programme lasted until 2010, while from 2010-2015 Hungary had been subject to post-programme surveillance.

2012 job cuts in public

2011, 16 % income tax for everybody!

Ireland (IE): Austerity Measures and Sources

Pay freeze to civil servants, 2008-2010*- Pay freeze, 2010-2014* ##

Pay cuts 5-7% for public sector employees (higher cuts to high paid), Feb 2009*

An increase in pension contributions for public employees that reduced pay on average 7.5%, 2009* #

Pay cuts 5-15% (higher for higher salaries- scales), Jan 2010* $ #

Pay cuts for salaries higher than €65000 in 2013 **##**

Other info:

Voluntary redundancies in 2010

Troika support €85 billion granted in Dec.2010 (exited the programme in Dec.2013). ++

The Public Service Agreement 2011–2014 (the "Croke Park agreement") severely restricted recruitment, and promotion #

Reductions in managerial positions#

Italy (IT): Austerity Measures and Sources

Pay freeze May 2010-2012*, pay freeze 2013 #

Pay cuts 5-10% - only for the high wage earners over 90000 euro in 2010*, (until 2013) #

Reduced productivity payments in high wage earners, 2010-2012*

Other info:

Pursue structural reforms in public sector at earlier years #

Lithuania (LT): Austerity Measures and Sources

Pay cuts 12% for the civil servants (did not include teachers, health care and social work), December 2008**

Pay cuts 8-10% for the civil servants, May and July 2009 (Higher reduction in tertiary educated and high paid)*, ##

Pay cuts 8-10% for the civil servants, October 2010 ##

Pay freeze 2010- 2012*, 2013##

Wages increase (restore wages to pre-crisis levels) October 2013 ##

Luxemburg (LU): Austerity Measures and Sources

Pay freeze in 2011 ##

Pay increase based on wage indexation only, October 2012 and October 2013##

Other info:

Performance management and progression of civil servants have been reformed. #

Latvia (LV): Austerity Measures and Sources

Pay cuts of additional payments and bonuses, mid 2008#

Pay cuts 5-20% in 2009 (protection to the low paid)*.

Pay cuts on average 5% (new pay system-same for all central and local gov.) in 2010*

Other info:

IMF, EU support of €7.5 billion in 2009: The programme lasted until dec.2011, while from 2012-Jan.2015 Latvia had been subject to post-programme surveillance.

This unified payment system for all Public Sector employees in the State Administration came into force in 2006 and has been fully applied since July 2007. Wage criteria include: complexity of the post (67%); performance appraisal (23%) and seniority (10%). The public sectors of the

Administration are classified into position categories and into 16 wage groups. Wage groups are re-evaluated each year based on private sector salaries and the state of the budget. (Source: Ministry of the Spanish presidency 2010, publication "Public employment in the European Union Member States".)

Malta (MT): Austerity Measures and Sources

Pay increase 2011-2013 ##

Netherlands (NL): Austerity Measures and Sources

Pay increase approximately 1% 2009, 2010*

No agreement concluded in central government after 2011#

Pay increase 0.9% in 2012 ##

Norway (NO): Austerity Measures and Sources

Pay increases 2007-2013

Other info:

Pursue large scale reforms

Poland (PL): Austerity Measures and Sources

Pay freeze 2011, 2012* (excludes teachers#)

Pay freeze 2012, 2013 ##

Portugal (PT): Austerity Measures and Sources

Pay freeze for civil servants 2010-2013**

Pay cuts 3.5-10% for the high paid (>1500 € per month) in 2011*#

Pay cuts approximately. 12% in 2012 (temporary suspension of the 13th and 14th salaries for medium and high earners >1100) ++#

Pay reductions 3.5-10% for the high paid (>1500 € per month) in 2013-2014 #

Other info:

Troika support €78 billion in 2011 (The programme lasted until 2014, while from 2014-2026 is subject to post-programme surveillance.)

Reductions in managerial positions#

There were around 11 000 early retirement requests in the civil service during 2011. In April 2012 a law was passed with immediate effect to suspend early retirement rules until 2014 to prevent further loss of civil service expertise and to improve fiscal control. #

Romania (RO): Austerity Measures and Sources

Temporary pay cuts 25%, with cuts in bonuses and additional payments (e.g. food allowances, rent subsidies) for 6 months in 2010* # (workers will suffer an effective wage decrease of 50%)***

Pay cut by 10% #- elimination of bonuses and 13th salary in 2011*

Pay increase by 10% 2012, 2013 (to compensate for the cuts in 2010) ##

Other info:

Troika support of €20 billion in 2009 (The programme lasted until 2015, while from 2015-2018 is subject to post-programme surveillance.)++

In 2009, considerable job cuts, and the possibility of a 10-day period of compulsory unpaid leave for public sector employees, together with reduced working hours, were introduced ***

The government announced plans to cut 100,000 jobs in the public sector in 2010.***

In 2010, reform of public sector pay: creation of a unified wage low, to be applied later in 2014.++

Increase in min wages from 390 lei in 2007 to 800 in 2013. (Source: A. Salcearu, economic insights)

Slovakia (SK): Austerity Measures and Sources

Pay increase in 2009, 2010 $

Pay freeze 2011###, 2012, 2013 ##

Slovenia (SL): Austerity Measures and Sources

Pay freeze 2009*, Pay freeze 2011 and half of 2012#, Pay freeze in 2013##

Plans to cut basic pay by 4 % at the end of 2011 were rejected #

Pay cuts 8% in May 2012 (but the government paid an increase approximately 5% to eliminate wage disparities among individual occupational groups in the sector, that was supposed to be paid in Sept 2009) *, ##, #

Freeze promotions between 2011 and 2014

Pay cuts by 1.3% on average, May 2013 (partly in a linear and partly in a progressive manner), (it was agreed that wages would be returned to the level before this cut in January 2015). Other cuts, such as women's increased seniority bonus, was abolished; allowances for specialisations, masters' and doctoral qualifications were cut by half; sickness benefits were lowered. No wage indexation.

Other info:

The beginning of the crisis coincided with the implementation of a long-planned wage reform aimed at eliminating wage disparities among individual occupational groups in the sector – which resulted in a relatively high wage growth in 2008 and 2009. Due to the crisis, the completion of this reform was postponed until 2012. (Source: Eurofound, Slovenia: Seventh public sector pay agreement signed.)

Collective bargaining in the public sector is still highly centralized, while in the private sector it became less centralized during the crisis, from 31st December 2009. Data for coverage in 2005 report on 96% of coverage of workers with collective agreements. In 2013, according to trade unions statistics, about 100.000 workers in the private sector are not covered by collective agreements, so the coverage has declined sharply. Previous government has endorsed the "Eurozone competition pact", which proposes the abolishment of wage indexation, but trade unions were critical and it was not implemented (Source: Eurofound, Slovenia: impact of the crisis on industrial relations).

Sweden (SE): Austerity Measures and Sources

Pay increase by 1.3% in 2012, and by 2% in 2013 ##

Other info:

Pursue structural reforms in public sector at earlier years #

United Kington (UK): Austerity Measures and Sources

Pursue structural reforms in public sector at earlier years #

Pay freeze June 2010-2013*, ** (excluded workers earning less than £21 000 (around €26 000) a year except in the case of local government workers covered by a separate agreement. # Also, pay scale freezes have not stopped progression in sectors such as the health service, enabling workers to continue to gain nominal wage increases by moving up the pay scale. #)

Other info:

Reductions in managerial positions#

Sources:

**Public sector pay and procurement in Europe during the crisis: The challenges facing local governments and the prospects for segmentation inequalities and social dialogue (2012), Damian Grimshaw,Jill Rubery and Stefania Marino, European Commission Project, Coordinated by EWERC, Manchester Business School, University of Manchester.*

**1 Bosch G., Mesaros L., Schilling G. and Weinkopf C. (2012) The public sector pay system and public procurement in Germany.*

**2Erzsébet Berki, László Neumann, Márk Edelényi and Kitti Varadovics (2012) The public sector pay system and public procurement in Hungary.*

***Vera Glassner and Andrew Watt (2010), Cutting Wages and Employment in the Public Sector: Smarter Fiscal Consolidation Strategies Needed, Intereconomics 2010, 4*

****Glassner (2010), The public Sector in the crisis*

#Industrial Relations in Europe 2012, European Commission

##EPSU Report 2010, The wrong target – how governments are making public sector workers pay for the crisis

##Eurofound Eurowork Developments in collectively agreed pay 2013

###Eurofound Eurowork Pay developments 2011

+Jose-Ignasio Anton and Rafael Munoz de Bustillo (2015) Public-private sector wage differentials in Spain. An updated picture in the midst of the Great Recession, Investigacion Economica, Vol LXXIV, No.292, pp115-157

++European Commission, Economic and Financial affairs, Policy and surveillance, Financial Assistance in EU Member States,

http://ec.europa.eu/economy_finance/assistance_eu_ms/cyprus/index_en.htm

+++Christopoulou R. and V. Monastiriotis (2015), Public-Private wage duality during the Greek crisis, Oxford Economic Papers

&Nikolic J, I. Rubil and I. Tomic (2014), Changes in Public and Private Sector Pay Structures in Two Emerging Market Economies during the Crisis, The Institute of Economics Zagreb Working Papers

@ Euromode country reports

$David Hall, Violeta Corral, and Sandra van Niekerk (2010), The impact of the economic crisis on public sector pay, ILO Report

EU Which countries received financial assistance

https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-financial-assistance/which-eu-countries-have-received-assistance_en

Table A2. Notes on Austerity Measures and Sources

	AT	BE	BG	CH	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HR	HU
public	2.839***	2.855***	0.442***	n.a.	2.575***	1.548***	2.833***	3.205***	1.395***	2.507***	2.559***	2.932***	2.598***	n.a	1.455***
private	2.786***	2.873***	0.306***	n.a.	2.204***	1.358***	2.846***	3.173***	1.305***	2.176***	2.246***	2.819***	2.640***	n.a	1.139***
difference	**0.053****	**-0.019**	**0.135*****	n.a.	**0.371*****	**0.190*****	**-0.013**	**0.032**	**0.090*****	**0.331*****	**0.313*****	**0.112*****	**-0.042*****	**n.a**	**0.316*****
explained	0.076***	0.027**	0.096***	n.a.	0.154***	0.074***	0.052***	-0.008	0.077***	0.133***	0.154***	0.087***	-0.018**	n.a	0.138***
publ. adv.	-0.020	-0.037***	0.035	n.a.	0.183***	0.104***	-0.052***	0.038**	0.011	0.157***	0.131***	0.023**	-0.019**	n.a	0.154***
priv. dis.	-0.003	-0.009***	0.005	n.a.	0.033***	0.011***	-0.012***	0.002**	0.001	0.041***	0.028***	0.002**	-0.005**	n.a	0.024***
unexplained#	-0.023	-0.046	0.04	n.a.	0.216	0.115	-0.064	0.04	0.012	0.198	0.159	0.025	-0.024	n.a	0.178
% unexpl.	-43.4%	242.1%	29.6%	n.a.	58.2%	60.5%	492.3%	125.0%	13.3%	59.8%	50.8%	22.3%	57.1%	n.a	56.3%
explained															
age	0.025***	0.029***	0.002	n.a.	-0.003	0.001	0.014***	-0.006	-0.007	0.045***	0.042***	0.014***	0.019***	n.a	-0.001
education	0.002	-0.013**	0.055***	n.a.	0.007	0.039***	0.010***	-0.003	0.038***	0.029***	0.046***	0.039***	-0.009**	n.a	0.085***
gender	0.013*	-0.003	0.017**	n.a.	0.055***	0.006	-0.001	-0.006	-0.010	0.023***	0.003	0.010*	-0.005***	n.a	0.000
occupation	0.036***	0.014***	0.021**	n.a.	0.096***	0.029***	0.029***	0.007	0.056***	0.036***	0.063***	0.024***	-0.024***	n.a	0.054***
public sector advantage															
age	-0.002	-0.004	0.006	n.a	-0.000	0.001	0.009	-0.001	-0.001	-0.001	-0.006	-0.006	0.003	n.a	0.002
education	-0.031	0.001	0.053**	n.a	0.023	-0.034	-0.025	-0.015*	-0.059**	-0.013	-0.003	0.001	0.001	n.a	0.010
gender	-0.013	-0.010***	0.003	n.a	-0.009*	-0.000	-0.016***	0.006	0.003	-0.011**	-0.000	-0.000	-0.000	n.a	0.001
occupation	0.057***	-0.004	0.084***	n.a	-0.009	0.058***	-0.039***	-0.013	0.014	-0.014	0.015	-0.009	0.020	n.a	0.022
Constant	-0.030	-0.020	-0.112***	n.a	0.179***	0.080**	0.019	0.061	0.053*	0.195***	0.125***	0.038	-0.043**	n.a	0.119***
private sector disadvantage															
age	-0.001	-0.001	0.000	n.a	-0.001	-0.000	0.001	-0.000	-0.000	-0.004*	-0.001**	-0.000	-0.001*	n.a	0.001
education	-0.001	0.001	0.003	n.a	0.003**	0.003**	-0.002	-0.001	-0.002	0.001	0.001	0.001	-0.000	n.a	-0.000
gender	-0.002*	-0.003***	-0.000	n.a	-0.000	-0.000	-0.004***	0.000	0.000	0.000	0.000	-0.000**	-0.000	n.a	0.000
occupation	0.010***	-0.002	0.011***	n.a	0.005	0.000	-0.006***	-0.001	-0.000	0.009*	0.008***	0.001*	-0.001	n.a	0.004*
Constant	-0.009*	-0.004	-0.009	n.a	0.026***	0.008***	-0.001	0.004**	0.004	0.035***	0.021***	0.001	-0.003	n.a	0.019***
observ.	2,009	2,235	1,897	n.a	1,992	5,264	4,672	3,508	2,229	2,389	5,530	5,380	4,335	n.a	3,487

*Notes: (1) Robust standard errors are calculated; (2) *, **, *** significant at 10%, 5% and 1% level, respectively.*

Table A3. OR Decomposition Results 2007 (EU SILC 2008) continued…

	IE	IS	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK
public	3.191***	3.242***	2.732***	1.232***	3.309***	1.526***	2.072***	3.239***	3.169***	1.468***	2.083***	0.829***	2.931***	2.235***	1.195***	2.856***
private	3.020***	3.132***	2.548***	1.048***	3.057***	1.137***	2.114***	3.164***	3.219***	1.187***	1.784***	0.571***	2.882***	2.030***	1.060***	2.791***
difference	**0.170*** **	**0.109*** **	**0.184*** **	**0.184*** **	**0.252*** **	**0.389*** **	**-0.042***	**0.075*** **	**-0.050***	**0.281*** **	**0.299*** **	**0.258*** **	**0.049**	**0.205*** **	**0.135*** **	**0.065*** **
explained	0.061***	0.085***	0.090***	0.127***	0.022	0.230***	-0.011	0.037**	0.033*	0.174***	0.110***	0.135***	0.037*	0.195***	0.056***	-0.017
publ. adv.	0.090***	0.021	0.077***	0.050**	0.207***	0.135***	-0.027	0.035***	-0.080***	0.093***	0.156***	0.113***	0.012	0.009	0.063***	0.070***
priv. dis.	0.020***	0.002	0.017***	0.007**	0.023***	0.024***	-0.005	0.003***	-0.003***	0.014***	0.033***	0.010***	0.000	0.001	0.016***	0.012***
unexplained#	0.11	0.023	0.094	0.057	0.23	0.159	-0.032	0.038	-0.083	0.107	0.189	0.123	0.012	0.01	0.079	0.082
% unexpl.	64.7%	21.1%	51.1%	31.0%	91.3%	40.9%	76.2%	50.7%	166.0%	38.1%	63.2%	47.7%	24.5%	4.9%	58.5%	126.2%
explained																
age	0.053***	0.014*	0.051***	0.002	0.013	0.001	0.013***	0.016**	0.020***	0.001	0.046***	-0.001	-0.032***	0.009**	0.002	0.003
education	0.018*	0.047***	0.016***	0.032***	-0.039***	0.108***	-0.018**	0.025***	0.013*	0.063***	0.011	0.045***	0.025***	0.119***	0.045***	0.031***
gender	-0.005	-0.002	0.009***	0.011	0.027***	-0.004	0.009**	-0.006**	-0.009	-0.006	0.027***	0.024***	0.012	-0.000	-0.029***	-0.021***
occupation	-0.005	0.026***	0.014***	0.082***	0.020	0.125***	-0.014	0.003	0.009	0.115***	0.025**	0.067***	0.032***	0.067***	0.037***	-0.029***
public sector advantage																
age	-0.015*	-0.008	-0.010**	0.007	-0.004	0.003	-0.003	-0.008*	-0.031***	-0.015**	0.010	-0.000	0.018	0.006	0.004	0.001
education	-0.008	0.010	-0.007*	0.006	-0.006	-0.081	0.013	-0.032***	-0.028*	-0.022	0.047**	0.002	-0.085*	0.027	-0.028	0.039
gender	-0.000	-0.001	-0.002	0.004	-0.024	0.014**	0.004	-0.004	-0.001	-0.001	-0.005	-0.000	-0.003	-0.000	-0.000	0.001
occupation	0.031**	-0.001	-0.027	0.018	-0.049**	-0.022	0.002	0.021*	0.000	0.009	-0.055	0.057**	-0.045	-0.027	-0.020	-0.017
Constant	0.082***	0.022	0.123***	0.016	0.289***	0.221***	-0.042	0.058***	-0.021	0.121***	0.159***	0.055	0.127***	0.003	0.108**	0.046
private sector disadvantage																
age	-0.000	-0.001**	0.001*	0.001	0.001	0.000	0.000	-0.000	-0.000	-0.002**	0.001	0.000	-0.000	0.001	-0.000	0.000
education	-0.001	-0.001	0.000	0.000	-0.004***	-0.000	0.001	-0.001	-0.001*	0.002	0.007*	0.001	-0.000	0.002***	0.001	0.006***
gender	-0.000	-0.000	0.001*	0.001	0.001	0.001	-0.000	-0.001	-0.000	-0.000	-0.000	0.000	-0.000	-0.000	-0.000	-0.000
occupation	0.003***	-0.002*	0.000	-0.002	0.002	-0.009***	-0.001	0.001	-0.000	-0.001	0.005	-0.000	-0.000	-0.004**	-0.011***	-0.002**
Constant	0.018***	0.006**	0.015***	0.006	0.024***	0.031***	-0.005	0.004***	-0.002**	0.016***	0.021***	0.009*	0.001	0.003	0.025***	0.009***
observ.	1,512	1,882	6,414	2,289	1,978	2,358	1,316	3,820	3,241	5,134	1,614	2,778	3,803	6,404	3,484	3,375

*Notes: (1) Robust standard errors are calculated; (2) *, **, *** significant at 10%, 5% and 1% level, respectively.*

Table A3. OR Decomposition Results 2007 (EU SILC 2008)

	AT	BE	BG	CH	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HR	HU
public	2.879***	2.886***	0.783***	3.483***	2.631***	1.726***	2.868***	3.240***	1.618***	2.551***	2.611***	3.005***	2.652***	n.a.	1.480***
private	2.807***	2.903***	0.541***	3.388***	2.245***	1.528***	2.860***	3.230***	1.375***	2.225***	2.298***	2.903***	2.673***	n.a.	1.217***
difference	**0.072*** **	**-0.017**	**0.242*** **	**0.096*** **	**0.386*** **	**0.197*** **	**0.008**	**0.010**	**0.244*** **	**0.326*** **	**0.312*** **	**0.102*** **	**-0.020**	**n.a**	**0.263*** **
explained	0.084***	0.025**	0.151***	0.067***	0.167***	0.081***	0.063***	-0.003	0.163***	0.158***	0.137***	0.073***	0.007	n.a.	0.111***
publ. adv.	-0.010	-0.034***	0.079***	0.026	0.186***	0.104***	-0.044***	0.013	0.072***	0.133***	0.146***	0.028	-0.022**	n.a.	0.129***
priv. dis.	-0.002	-0.008***	0.012***	0.002	0.033***	0.013***	-0.011***	0.001	0.009***	0.035***	0.030***	0.001	-0.005**	n.a.	0.023***
unexplained#	-0.012	-0.042	0.091	0.028	0.219	0.117	-0.055	0.014	0.081	0.168	0.176	0.029	-0.027	n.a.	0.152
% unexpl.	-16.7%	247.1%	37.6%	29.2%	56.7%	59.4%	-687.5%	140.0%	33.2%	51.5%	56.4%	28.4%	135.0%	n.a.	57.8%
explained															
age	0.035***	0.030***	0.001	0.046***	-0.001	0.002	0.014***	-0.005	0.011*	0.058***	0.038***	0.006	0.021***	n.a	0.002
education	0.009	-0.019***	0.070***	0.019**	0.009	0.045***	0.015***	0.006	0.050***	0.024***	0.043***	0.029***	0.000	n.a	0.054***
gender	0.004	-0.004	0.014**	-0.004	0.050***	0.000	0.002	-0.004	0.006	0.022***	0.006**	0.007	-0.003**	n.a	-0.001
occupation	0.035***	0.018***	0.066***	0.007	0.109***	0.034***	0.032***	-0.001	0.095***	0.053***	0.050***	0.032***	-0.012**	n.a	0.056***
public sector advantage															
age	0.011	-0.000	0.001	0.005	0.000	0.005	0.011**	0.007	-0.004	-0.004	-0.007*	-0.005	0.007**	n.a	0.003
education	-0.023	-0.003	-0.013	-0.032	0.031*	0.078**	-0.026	-0.015	-0.000	0.002	-0.012**	0.004	0.001	n.a	0.036*
gender	-0.014**	0.001	0.002	-0.014	-0.007*	0.000	-0.018***	0.005	0.005	-0.010**	-0.000	-0.001	-0.000	n.a	0.000
occupation	0.008	0.009	0.063***	0.008	-0.042	0.033*	-0.040***	-0.006	0.023	-0.008	0.021	-0.041**	0.009	n.a	0.001
Constant	0.008	-0.041***	0.025	0.059	0.204***	-0.012	0.029	0.021	0.048	0.153***	0.144***	0.071**	-0.039	n.a	0.089***
private sector disadvantage															
age	-0.001	0.000	0.001	-0.000	-0.000	0.000	0.001	0.000	-0.001	-0.005**	-0.001**	-0.000	-0.002***	n.a	0.000
education	-0.001	-0.001	0.000	0.001	0.003**	0.006***	-0.001	-0.001	0.001	0.001	0.000	0.000	0.001	n.a	0.003*
gender	-0.001	0.001	-0.000	-0.002	-0.000	-0.000	-0.004***	0.000*	0.000	-0.000	0.000**	-0.000	0.000	n.a	-0.000
occupation	0.001	0.004*	0.006**	-0.000	0.001	0.002	-0.004**	-0.001	-0.000	0.006	0.009***	0.000	-0.001	n.a	0.004*
Constant	0.002	-0.012***	0.005	0.004*	0.030***	0.005**	-0.003	0.002	0.009***	0.033***	0.022***	0.001	-0.003	n.a	0.016***
observ.	2,118	2,157	2,680	2,270	1,846	4,443	4,834	3,520	2,211	2,508	5,411	5,373	4,596	n.a	3,891

*Notes: (1) Robust standard errors are calculated; (2) *, **, *** significant at 10%, 5% and 1% level, respectively.*

Table A4. OR Decomposition Results 2008 (EU SILC 2009) continued…

	IE	IS	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK
public	3.268***	2.844***	2.817***	1.418***	3.373***	1.697***	2.142***	3.280***	n.a.	1.661***	2.082***	0.848***	2.981***	2.346***	1.370***	2.714***
private	3.058***	2.778***	2.583***	1.203***	3.128***	1.321***	2.171***	3.196***	n.a.	1.360***	1.805***	0.616***	2.936***	2.112***	1.259***	2.660***
difference	**0.209*** **	**0.066** **	**0.234*** **	**0.215*** **	**0.245*** **	**0.376*** **	**-0.030**	**0.084*** **	**n.a**	**0.301*** **	**0.277*** **	**0.232*** **	**0.045** **	**0.233*** **	**0.111*** **	**0.054** **
explained	0.046**	0.080***	0.115***	0.119***	0.041	0.228***	0.005	0.038**	n.a.	0.178***	0.120***	0.096***	0.064***	0.197***	0.051***	-0.044**
publ. adv.	0.134***	-0.012	0.102***	0.084***	0.183***	0.124***	-0.028*	0.043***	n.a.	0.105***	0.132***	0.123***	-0.018	0.033***	0.048***	0.085***
priv. dis.	0.029***	-0.002	0.017***	0.012***	0.021***	0.025***	-0.007*	0.003***	n.a.	0.017***	0.025***	0.013***	-0.001	0.004***	0.012***	0.013***
unexplained#	0.163	-0.014	0.119	0.096	0.204	0.149	-0.035	0.046	n.a.	0.122	0.157	0.136	-0.019	0.037	0.06	0.098
% unexpl.	78.0%	-21.2%	50.9%	44.7%	83.3%	39.6%	116.7%	54.8%	n.a.	40.5%	56.7%	58.6%	-42.2%	15.9%	54.1%	181.5%
explained																
age	0.048***	0.018***	0.065***	0.001	0.024*	0.001	0.010*	0.015*	n.a	0.001	0.053***	0.002	-0.004	0.011**	0.003*	-0.000
education	-0.005	0.044***	0.018***	0.034***	-0.032***	0.113***	-0.003	0.028***	n.a	0.067***	0.013	0.038***	0.030***	0.118***	0.035***	0.019**
gender	-0.002	-0.003	0.005*	-0.019*	0.031***	0.010	0.004	-0.013***	n.a	-0.004	0.026***	0.016***	-0.002	0.001	-0.033***	-0.019***
occupation	0.005	0.021***	0.028***	0.103***	0.018	0.104***	-0.005	0.008	n.a	0.114***	0.028**	0.040***	0.040***	0.067***	0.046***	-0.044***
public sector advantage																
age	-0.009	-0.009	-0.017**	0.000	0.002	-0.001	0.001	-0.007	n.a	-0.012***	-0.001	-0.008	-0.004	0.002	0.002	0.000
education	0.007	0.010	-0.015***	-0.102	-0.005	0.064	0.013*	-0.008	n.a	0.018	0.047***	0.040	-0.060	-0.021	0.015	-0.021
gender	0.003	-0.005	-0.006**	0.002	-0.008	0.007*	-0.004	-0.009	n.a	0.001	-0.004	0.002	-0.003	-0.000	-0.001	-0.001
occupation	0.004	0.015	-0.055***	0.010	-0.023	0.004	0.009	0.001	n.a	0.012	-0.045	0.040	0.027	-0.003	0.003	-0.018
Constant	0.130***	-0.023	0.194***	0.173*	0.216***	0.049	-0.047**	0.066**	n.a	0.087***	0.135**	0.049	0.021	0.055	0.029	0.124***
private sector disadvantage																
age	-0.001	-0.000	0.001***	0.000	0.001	-0.000	0.000	-0.000	n.a	-0.002***	-0.001	-0.001	-0.000	0.000	0.000	-0.000
education	0.002	-0.000	-0.001	0.000	-0.003***	0.003	0.002	-0.000	n.a	0.003**	0.007**	0.002*	-0.001**	0.001	0.007*	0.002
gender	0.001	-0.000	0.000	-0.000	0.002**	0.001	-0.000	-0.002*	n.a	0.000	-0.000	0.000	-0.000**	-0.000	0.000	0.001
occupation	0.002	0.001	-0.002	-0.003**	0.002	-0.013***	0.001	0.000	n.a	-0.001	0.006**	0.001	0.001	-0.001	-0.004	-0.000
Constant	0.025***	-0.002	0.019***	0.015***	0.020***	0.033***	-0.009**	0.006***	n.a	0.018***	0.013***	0.011**	0.000	0.004	0.009*	0.011***
observ.	1,499	1,641	6,252	2,308	2,058	2,448	1,360	3,450	n.a	4,805	1,809	2,788	3,570	6,421	3,593	2,606

*Notes: (1) Robust standard errors are calculated; (2) *, **, *** significant at 10%, 5% and 1% level, respectively.*

Table A4. OR Decomposition Results 2008 (EU SILC 2009)

overall	AT	BE	BG	CH	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HR	HU
public	2.925***	2.941***	0.750***	3.509***	2.683***	1.686***	2.876***	3.327***	1.598***	2.550***	2.627***	3.033***	2.679***	n.a.	1.363***
private	2.866***	2.930***	0.535***	3.405***	2.221***	1.504***	2.859***	3.267***	1.402***	2.255***	2.314***	2.942***	2.680***	n.a.	1.137***
difference	**0.058****	**0.011**	**0.215*****	**0.104*****	**0.461*****	**0.183*****	**0.017**	**0.060****	**0.196*****	**0.294*****	**0.313*****	**0.092*****	**-0.000**	**n.a**	**0.226*****
explained	0.054***	0.027**	0.131***	0.044***	0.204***	0.073***	0.063***	0.039**	0.154***	0.153***	0.140***	0.060***	0.008	n.a.	0.115***
publ. adv.	0.004	-0.013	0.074***	0.055***	0.219***	0.097***	-0.038***	0.020	0.036	0.110***	0.143***	0.030*	-0.007	n.a.	0.092***
priv. dis.	0.001	-0.003	0.011***	0.005***	0.039***	0.013***	-0.008***	0.001	0.005	0.032***	0.030***	0.001*	-0.001	n.a.	0.018***
unexplained#	0.005	-0.016	0.085	0.06	0.258	0.11	-0.046	0.021	0.041	0.142	0.173	0.031	-0.008	n.a.	0.11
% unexpl.	8.6%	-145.5%	39.5%	57.7%	56.0%	60.1%	-270.6%	35.0%	20.9%	48.3%	55.3%	33.7%	n.a.	n.a.	48.7%
explained															
age	0.041***	0.038***	-0.001	0.021***	0.023**	-0.000	0.015***	-0.007	0.006	0.056***	0.049***	0.005	0.025***	n.a.	-0.000
education	-0.009	-0.018***	0.058***	0.021**	0.022***	0.035***	0.010**	0.024***	0.052***	0.021***	0.044***	0.022***	-0.007	n.a.	0.076***
gender	-0.006	-0.008***	0.016***	-0.001	0.048***	0.007	0.006	0.006	0.025**	0.027***	0.004	0.009	-0.002	n.a.	-0.008**
occupation	0.028***	0.014**	0.059***	0.003	0.111***	0.031***	0.033***	0.017	0.071***	0.049***	0.043***	0.025***	-0.007	n.a.	0.048***
public sector advantage															
age	0.007	-0.002	-0.001	0.003	-0.005	0.006**	0.009*	0.001	-0.007	-0.004	-0.003	0.002	0.005	n.a.	0.003
education	0.026	0.005	-0.022	-0.038	0.041**	0.014	0.014	-0.145***	-0.075*	-0.015	-0.019***	0.060***	-0.010*	n.a.	-0.001
gender	-0.005	-0.002	0.001	-0.015*	-0.007*	0.000	-0.016***	-0.000	-0.004	-0.010**	-0.002	-0.001	0.001	n.a.	0.002
occupation	0.029	0.003	0.067***	-0.020	-0.047**	0.040**	-0.039***	0.037	0.014	0.038	-0.006	-0.025	-0.012	n.a.	0.019
Constant	-0.054	-0.016	0.029	0.126**	0.237***	0.036	-0.006	0.129*	0.108**	0.101***	0.173***	-0.007	0.009	n.a.	0.069***
private sector disadvantage															
age	-0.001	-0.001	0.000	0.000	-0.001	0.000	0.001**	-0.000	-0.000	-0.003	-0.001	0.000	-0.000	n.a.	0.000
education	0.003*	0.002	0.002	0.001	0.004***	0.004*	0.001	-0.001	-0.001	0.001	-0.001*	0.001**	-0.002	n.a.	0.002
gender	-0.001	-0.001	-0.000	-0.001	0.001	-0.000	-0.003***	0.000	0.001**	0.000	0.000	-0.000	0.000*	n.a.	0.000
occupation	0.000	0.002	0.006***	-0.001	0.000	0.006***	-0.002	-0.001	-0.002**	0.014***	0.006***	0.000	-0.001	n.a.	0.003
Constant	-0.000	-0.004	0.003	0.006***	0.036***	0.003	-0.006**	0.003	0.007**	0.019***	0.026***	0.000	0.001	n.a.	0.014***
observ.	2,252	2,228	3,210	2,427	2,231	4,188	4,849	3,369	2,098	2,186	5,508	5,592	4,660	n.a.	3,904

*Notes: (1) Robust standard errors are calculated; (2) *, **, *** significant at 10%, 5% and 1% level, respectively.*

Table A5. OR Decomposition Results 2009 (EU SILC 2010) continued…

overall	IE	IS	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK
public	3.234***	2.662***	2.789***	1.259***	3.398***	1.518***	2.174***	3.309***	3.241***	1.499***	2.151***	0.761***	2.933***	2.415***	1.441***	2.774***
private	3.044***	2.607***	2.581***	1.019***	3.119***	1.210***	2.181***	3.216***	3.259***	1.222***	1.853***	0.533***	2.863***	2.143***	1.306***	2.709***
difference	**0.190*** **	**0.054** **	**0.208*** **	**0.239*** **	**0.279*** **	**0.308*** **	**-0.007**	**0.093*** **	**-0.018**	**0.276*** **	**0.298*** **	**0.228*** **	**0.070** **	**0.271*** **	**0.135*** **	**0.064*** **
explained	0.000	0.061***	0.111***	0.121***	0.052**	0.221***	-0.004	0.036**	0.031*	0.156***	0.134***	0.113***	0.062***	0.199***	0.064***	-0.042**
publ. adv.	0.156***	-0.006	0.083***	0.106***	0.197***	0.074***	-0.002	0.052***	-0.046**	0.102***	0.136***	0.104***	0.007	0.064***	0.057***	0.092***
priv. dis.	0.034***	-0.001	0.014***	0.013***	0.030***	0.013***	-0.001	0.004***	-0.002**	0.018***	0.029***	0.011***	0.000	0.008***	0.014***	0.015***
unexplained#	0.19	-0.007	0.097	0.119	0.227	0.087	-0.003	0.056	-0.048	0.12	0.165	0.115	0.007	0.072	0.071	0.107
% unexpl.	100.0%	-13.0%	46.6%	49.8%	81.4%	28.2%	42.9%	60.2%	266.7%	43.5%	55.4%	50.4%	10.0%	26.6%	52.6%	167.2%
explained																
age	0.023**	0.018***	0.063***	-0.002	0.016	0.004	0.007	0.019**	0.000	-0.003	0.058***	0.003	0.022**	0.014***	0.002	-0.000
education	0.003	0.031***	0.021***	0.031***	-0.024***	0.104***	-0.008	0.026***	0.025***	0.056***	0.035*	0.052***	0.014***	0.126***	0.044***	0.006
gender	-0.004	-0.008	0.008***	-0.001	0.019***	0.007	0.004*	-0.013***	-0.008	-0.002	0.019***	0.013**	-0.014	-0.007*	-0.033***	-0.018***
occupation	-0.021*	0.020**	0.019***	0.092***	0.041***	0.105***	-0.007	0.004	0.014**	0.106***	0.022**	0.046***	0.039***	0.066***	0.051***	-0.030***
public sector advantage																
age	-0.001	-0.006	-0.005	-0.005	0.007	-0.001	0.002	-0.015***	-0.012	-0.004	0.013	-0.003	-0.010	0.001	0.000	-0.003
education	-0.036**	0.033**	-0.015***	0.061	-0.017**	-0.029	0.004	-0.020	-0.025	-0.017	0.028**	0.068**	-0.052	-0.003	-0.019	-0.015
gender	-0.002	-0.003	-0.001	0.003	-0.027***	0.009*	-0.008	-0.010	-0.001	0.001	-0.001	0.005	0.006	-0.001	-0.000	0.000
occupation	0.010	-0.016	-0.036	-0.015	-0.017	-0.021	0.024**	-0.031	-0.039	-0.028	-0.038	0.026	-0.002	0.004	0.026**	-0.017
Constant	0.184***	-0.013	0.141***	0.062	0.251***	0.116**	-0.025	0.128***	0.031	0.150***	0.134**	0.007	0.066	0.063**	0.050*	0.126***
private sector disadvantage																
age	0.002	-0.000	0.002***	0.000	0.002**	0.000	0.000	-0.000*	-0.000	-0.001	-0.001	0.000	0.000	-0.000	-0.001*	-0.000
education	-0.003	0.002*	-0.001	0.006	-0.005***	0.001	0.000	-0.000	-0.001	0.001	0.004	0.002*	-0.002	0.002***	0.004	-0.000
gender	0.001	-0.001	0.001**	0.000	-0.000	0.001*	-0.001	-0.003**	-0.000**	0.000	-0.001	0.000	-0.000**	-0.000	0.000	-0.000
occupation	0.000	-0.003	0.000	-0.002	0.004**	-0.010***	0.003**	-0.001	-0.001	-0.000	0.007***	0.001	-0.001	0.000	-0.003	-0.001
Constant	0.034***	0.001	0.012***	0.008	0.028***	0.020***	-0.003	0.009***	-0.000	0.018***	0.019***	0.007	0.004**	0.006***	0.014***	0.016***
observ.	1,363	1,646	5,998	2,375	2,368	2,394	1,373	3,490	3,072	4,662	1,843	2,700	3,513	6,328	3,753	2,356

*Notes: (1) Robust standard errors are calculated; (2) *, **, *** significant at 10%, 5% and 1% level, respectively.*

Table A5. OR Decomposition Results 2009 (EU SILC 2010)

overall	AT	BE	BG	CH	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HR	HU
public	2.953***	2.994***	0.760***	3.591***	2.720***	1.731***	2.904***	3.322***	1.571***	2.445***	2.612***	3.067***	2.684***	1.794***	1.439***
private	2.896***	2.939***	0.511***	3.509***	2.265***	1.572***	2.874***	3.285***	1.408***	2.239***	2.312***	2.967***	2.692***	1.556***	1.167***
difference	**0.057****	**0.055*****	**0.249*****	**0.082*****	**0.456*****	**0.159*****	**0.029****	**0.038**	**0.162*****	**0.207*****	**0.301*****	**0.100*****	**-0.008**	**0.238*****	**0.272*****
explained	0.048***	0.022*	0.139***	0.026	0.222***	0.067***	0.071***	0.038**	0.140***	0.131***	0.164***	0.053***	0.018*	0.094***	0.130***
publ. adv.	0.008	0.027**	0.096***	0.050***	0.198***	0.082***	-0.033***	-0.000	0.020	0.057***	0.113***	0.043**	-0.022*	0.127***	0.118***
priv. dis.	0.001	0.006**	0.014***	0.005***	0.036***	0.011***	-0.008***	-0.000	0.003	0.018***	0.024***	0.004**	-0.004*	0.016***	0.024***
unexplained#	0.009	0.033	0.11	0.055	0.234	0.093	-0.041	0.000	0.023	0.075	0.137	0.047	-0.026	0.143	0.142
% unexpl.	15.8%	60.0%	44.2%	67.1%	51.3%	58.5%	-141.4%	0.0%	14.2%	36.2%	45.5%	47.0%	325.0%	60.1%	52.2%
explained															
age	0.026***	0.032***	0.004*	0.001	0.034***	0.000	0.013***	-0.004	0.003	0.051***	0.041***	0.012***	0.019***	0.004	-0.000
education	-0.006	-0.019**	0.064***	0.022***	0.029***	0.042***	0.009**	0.034***	0.069***	0.023***	0.041***	0.021***	-0.008**	0.059***	0.090***
gender	0.003	-0.003	0.015***	-0.001	0.044***	-0.000	0.001	-0.002	0.005	0.021***	0.005**	0.001	-0.001	0.009**	-0.008**
occupation	0.025***	0.012**	0.056***	0.005	0.115***	0.024***	0.048***	0.011	0.062***	0.035***	0.076***	0.018*	0.008	0.022**	0.049***
public sector advantage															
age	0.013	-0.004	-0.001	0.000	0.002	0.001	0.013**	0.003	-0.001	-0.012**	0.002	-0.014*	0.011***	0.009	0.002
education	-0.002	0.010	-0.025	-0.034	-0.013	0.085	-0.003	-0.036	0.045	-0.033*	-0.014**	-0.023	-0.002	-0.030	0.057***
gender	-0.003	-0.000	0.002	-0.014	-0.004	-0.000	-0.013***	0.007	0.004	-0.007	-0.004**	-0.001	0.001	-0.001	-0.001
occupation	-0.000	-0.003	0.115***	-0.028	-0.038*	0.077***	-0.069***	-0.014	0.012	0.040*	0.013	0.019	0.008	0.009	0.012
Constant	-0.000	0.025	0.005	0.125**	0.251***	-0.081	0.039	0.040	-0.040	0.069**	0.116***	0.062**	-0.040***	0.139***	0.048**
private sector disadvantage															
age	-0.002*	-0.001	0.000	-0.000	-0.001	0.000	0.001**	-0.000	-0.000	-0.001	0.001	-0.000	0.001*	0.001	0.000
education	-0.000	0.002	0.001	0.002	0.002	0.004***	-0.000	-0.002*	0.000	0.000	-0.002***	0.001	-0.000	0.001	0.005***
gender	-0.000	0.000	-0.001**	-0.001	-0.000	-0.000	-0.003***	0.001**	0.001**	-0.000	-0.000	-0.000	0.000	-0.000	0.000
occupation	0.000	-0.000	0.010***	-0.001	0.004	0.006***	-0.005***	-0.001	-0.002**	0.013**	0.005***	-0.000	0.001	0.004	0.002
Constant	0.003	0.006	0.003	0.005**	0.031***	0.000	-0.001	0.003	0.004	0.006	0.020***	0.004***	-0.005*	0.011**	0.017***
observ.	2,161	1,812	3,287	2,274	2,417	3,953	4,580	1,339	2,137	1,510	4,975	2,183	4,563	2,448	4,563

*Notes: (1) Robust standard errors are calculated; (2) *, **, *** significant at 10%, 5% and 1% level, respectively.*

Table A6. OR Decomposition Results 2010 (EU SILC 2011) continued…

overall	IE	IS	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK
public	3.267***	2.704***	2.784***	1.286***	3.414***	1.432***	2.286***	3.368***	3.426***	1.629***	2.178***	0.700***	3.048***	2.387***	1.473***	2.820***
private	3.084***	2.698***	2.608***	0.987***	3.153***	1.173***	2.177***	3.219***	3.424***	1.331***	1.846***	0.578***	2.999***	2.173***	1.348***	2.735***
difference	**0.183*** **	**0.006**	**0.176*** **	**0.299*** **	**0.261*** **	**0.259*** **	**0.110*** **	**0.149*** **	**0.002**	**0.298*** **	**0.333*** **	**0.122*** **	**0.050**	**0.214*** **	**0.125*** **	**0.086*** **
explained	0.043**	0.038**	0.101***	0.121***	0.042**	0.214***	-0.003	0.075***	0.044***	0.140***	0.134***	0.088***	0.042**	0.184***	0.058***	0.000
publ. adv.	0.116***	-0.028	0.063***	0.158***	0.190***	0.038*	0.088***	0.062***	-0.037	0.135***	0.165***	0.030	0.007	0.027*	0.054***	0.075***
priv. dis.	0.024***	-0.005	0.013***	0.020***	0.029***	0.007*	0.025***	0.013***	-0.005	0.023***	0.034***	0.003	0.001	0.003*	0.013***	0.011***
unexplained#	0.14	-0.033	0.076	0.178	0.219	0.045	0.113	0.075	-0.042	0.158	0.199	0.033	0.008	0.03	0.067	0.086
% unexpl.	76.5%	-550.0%	43.2%	59.5%	83.9%	17.4%	102.7%	50.3%	-2100.0%	53.0%	59.8%	27.0%	16.0%	14.0%	53.6%	100.0%
explained																
age	0.044***	0.004	0.040***	-0.001	-0.003	0.007*	0.017***	0.042***	0.006	-0.001	0.052***	0.001	0.009	0.011**	0.003**	0.007
education	-0.011	0.025***	0.018***	0.034***	-0.016**	0.099***	-0.033***	0.027**	0.019***	0.068***	0.032*	0.061***	0.017***	0.115***	0.042***	0.012
gender	-0.002	-0.019***	0.011***	0.003	0.020***	-0.017**	0.016***	-0.003	-0.005	0.002	0.030***	0.007	-0.007	-0.001	-0.035***	-0.012**
occupation	0.013	0.029***	0.032***	0.085***	0.041***	0.125***	-0.003	0.009	0.025***	0.072***	0.020**	0.019**	0.023**	0.060***	0.047***	-0.006
public sector advantage																
age	-0.009	-0.009	-0.001	-0.003	0.003	-0.003	-0.007*	-0.021	-0.005	-0.004	0.005	0.004	-0.003	-0.005	-0.001	-0.012**
education	-0.011	0.017	-0.015***	0.136	-0.016***	-0.035	-0.011	0.001	-0.013	-0.051	0.018*	-0.002	0.048*	0.005	0.001	-0.015
gender	0.000	0.001	0.002	-0.001	-0.027***	0.015**	0.010	-0.008	0.002	-0.000	-0.004	0.001	0.002	-0.001	-0.003	-0.001
occupation	-0.018	-0.000	0.029*	0.006	-0.069***	0.017	-0.011	0.019	-0.137***	0.010	-0.058***	0.024	-0.058	-0.007	-0.008	0.068*
Constant	0.153***	-0.036	0.048**	0.019	0.299***	0.043	0.107***	0.070**	0.116**	0.180***	0.205***	0.003	0.018	0.034	0.065	0.035
private sector disadvantage																
age	-0.001	-0.001	0.001*	-0.001	0.001**	0.001	-0.001	-0.001	-0.001	-0.000	-0.001	0.000	-0.000	-0.001	-0.001	-0.001
education	-0.004	0.001	-0.001	0.009**	-0.003***	-0.002	-0.001	0.002	-0.000	0.001	-0.000	0.000	0.001	0.001***	0.004	0.001
gender	-0.000	-0.000	0.001***	-0.001*	-0.000	0.001	0.003***	-0.003	0.000	-0.001***	-0.001*	0.000	-0.000	-0.000	-0.000	0.001*
occupation	0.002	-0.001	0.006**	-0.000	0.003	-0.007***	-0.002	-0.001	-0.003*	0.003*	-0.000	0.002	-0.003	-0.000	-0.001	-0.002
Constant	0.026***	-0.004	0.006*	0.013**	0.028***	0.014***	0.026***	0.015***	-0.001	0.020***	0.036***	0.001	0.003	0.003	0.011**	0.012***
observ.	1,261	1,693	6,191	2,309	2,638	2,649	1,607	1,535	1,201	4,567	2,027	2,719	1,602	6,155	3,404	2,560

*Notes: (1) Robust standard errors are calculated; (2) *, **, *** significant at 10%, 5% and 1% level, respectively.*

Table A6. OR Decomposition Results 2010 (EU SILC 2011)

overall	AT	BE	BG	CH	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HR	HU
public	3.006***	n.a.	0.753***	3.724***	2.728***	1.768***	2.937***	3.372***	1.596***	2.340***	2.621***	3.071***	2.696***	1.770***	1.427***
private	2.950***	n.a.	0.545***	3.621***	2.270***	1.637***	2.904***	3.312***	1.484***	2.155***	2.341***	3.003***	2.710***	1.540***	1.206***
difference	**0.057****	**n.a**	**0.208*****	**0.103*****	**0.458*****	**0.130*****	**0.033*****	**0.061*****	**0.111*****	**0.185*****	**0.280*****	**0.069*****	**-0.014**	**0.230*****	**0.220*****
explained	0.056***	n.a.	0.132***	0.038**	0.196***	0.074***	0.056***	0.046***	0.133***	0.117***	0.101***	0.056***	0.030***	0.105***	0.102***
publ. adv.	0.001	n.a.	0.067***	0.059***	0.221***	0.050***	-0.019**	0.013	-0.019	0.051***	0.149***	0.011	-0.038***	0.110***	0.097***
priv. dis.	0.000	n.a.	0.010***	0.006***	0.041***	0.006***	-0.005**	0.002	-0.003	0.016***	0.030***	0.001	-0.005***	0.015***	0.021***
unexplained#	0.001	n.a.	0.077	0.065	0.262	0.056	-0.024	0.015	-0.022	0.067	0.179	0.012	-0.043	0.125	0.118
% unexpl.	1.8%	n.a.	37.0%	63.1%	57.2%	43.1%	-72.7%	24.6%	-19.8%	36.2%	63.9%	17.4%	307.1%	54.3%	53.6%
explained															
age	0.034***	n.a.	0.001	0.011	0.021**	0.003	0.009***	-0.004	0.006	0.041***	0.036***	0.008***	0.022***	0.018***	0.002
education	-0.002	n.a.	0.056***	0.027***	0.025***	0.043***	0.004	0.035***	0.065***	0.026***	0.041***	0.025***	0.001	0.054***	0.074***
gender	0.005	n.a.	0.015**	-0.001	0.044***	-0.008	-0.004	-0.001	0.019	0.017***	0.008***	-0.008	-0.006**	0.005	-0.010***
occupation	0.019*	n.a.	0.060***	0.001	0.107***	0.036***	0.048***	0.017*	0.044***	0.033***	0.016***	0.031***	0.013**	0.029***	0.037***
public sector advantage															
age	0.018*	n.a.	0.003	-0.012*	-0.001	-0.001	0.006	0.008	-0.005	0.002	-0.008*	-0.001	0.007**	-0.002	0.004*
education	-0.041	n.a.	-0.022	-0.078	0.011	0.020	0.002	0.013	-0.021	0.020	-0.016***	0.034	-0.009	-0.012	0.030*
gender	-0.007	n.a.	0.001	-0.027**	-0.005*	-0.000	-0.013***	-0.001	0.000	-0.007	-0.001	-0.000	-0.000	-0.001	0.001
occupation	0.064***	n.a.	0.100***	0.033*	-0.013	0.057***	-0.070***	-0.110***	0.050**	0.038	0.052*	-0.003	0.011	0.028	0.005
Constant	-0.033	n.a.	-0.015	0.143**	0.229***	-0.025	0.057**	0.103***	-0.043	-0.002	0.123***	-0.019	-0.047**	0.097**	0.057**
private sector disadvantage															
age	-0.001	n.a	0.001	-0.001***	-0.001*	-0.000	0.001	0.001	-0.001	-0.000	0.001	-0.000	0.000	-0.000	0.001**
education	-0.003	n.a	0.002*	0.001	0.003**	0.004***	-0.001	0.002*	-0.002*	0.004**	-0.002***	0.002	-0.001	0.001	0.005***
gender	-0.001	n.a	-0.000	-0.003*	-0.001	-0.000	-0.004***	-0.000	0.002***	-0.000	0.000**	-0.000	0.000	0.000	0.000
occupation	0.004**	n.a	0.007**	0.001	0.011*	0.003	-0.002	-0.002	-0.002	0.014	0.011***	-0.001	0.001	0.003	-0.000
Constant	0.001	n.a	0.001	0.007***	0.029***	-0.001	0.002	0.001	-0.000	-0.000	0.020***	0.000	-0.005**	0.011***	0.015***
observ.	1,946	n.a	2,685	2,434	2,925	4,038	4,622	1,250	2,264	1,391	4,634	5,033	5,055	2,163	4,338

*Notes: (1) Robust standard errors are calculated; (2) *, **, *** significant at 10%, 5% and 1% level, respectively.*

Table A7. OR Decomposition Results 2011 (EU SILC 2012) continued…

overall	IE	IS	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK
public	n.a.	2.735***	2.823***	1.331***	3.443***	1.563***	2.235***	3.365***	3.447***	1.653***	2.149***	0.738***	3.146***	2.437***	1.556***	2.907***
private	n.a.	2.749***	2.608***	1.121***	3.167***	1.259***	2.251***	3.259***	3.448***	1.333***	1.829***	0.594***	3.090***	2.209***	1.441***	2.783***
difference	**n.a**	**-0.013**	**0.215*** **	**0.210*** **	**0.276*** **	**0.304*** **	**-0.016**	**0.106*** **	**-0.001**	**0.320*** **	**0.320*** **	**0.144*** **	**0.055**	**0.227*** **	**0.115*** **	**0.124*** **
explained	n.a.	0.059***	0.102***	0.116***	0.045***	0.229***	-0.017	0.086***	0.036**	0.164***	0.178***	0.087***	0.032	0.194***	0.047***	0.019
publ. adv.	n.a.	-0.063***	0.096***	0.084***	0.200***	0.065***	0.000	0.016	-0.033*	0.134***	0.121***	0.051**	0.021	0.030**	0.054***	0.092***
priv. dis.	n.a.	-0.009***	0.017***	0.011***	0.032***	0.011***	0.000	0.003	-0.004*	0.022***	0.021***	0.006**	0.002	0.004**	0.014***	0.013***
unexplained#	n.a.	-0.072	0.113	0.095	0.232	0.076	0.000	0.019	-0.037	0.156	0.142	0.057	0.023	0.034	0.068	0.105
% unexpl.	n.a.	553.8%	52.6%	45.2%	84.1%	25.0%	0.0%	17.9%	3700.0%	48.8%	44.4%	39.6%	41.8%	15.0%	59.1%	84.7%
explained																
age	n.a.	0.015**	0.048***	0.001	0.009	0.009**	0.007	0.045***	0.001	0.004	0.057***	-0.004	0.012	0.015***	0.004**	0.004
education	n.a.	0.022***	0.017***	0.030***	-0.029***	0.103***	-0.009	0.031***	0.028***	0.077***	0.044***	0.050***	0.024***	0.111***	0.040***	0.022***
gender	n.a.	-0.028***	0.011***	0.007	0.023***	-0.004	0.001	-0.006*	-0.017**	-0.000	0.029***	0.007	-0.024***	-0.002	-0.031***	-0.010**
occupation	n.a.	0.049***	0.027***	0.078***	0.042***	0.120***	-0.016**	0.016**	0.024***	0.083***	0.048***	0.034***	0.021	0.070***	0.034***	0.003
public sector advantage																
age	n.a.	-0.022	-0.026***	0.000	0.002	0.001	-0.001	-0.013*	-0.008	-0.001	0.028***	-0.001	-0.006	-0.001	0.002	-0.001
education	n.a.	0.017	-0.017***	0.199*	-0.010	0.055	0.004	0.003	-0.041	-0.034	0.010	0.023	-0.049	0.070*	0.008	0.022
gender	n.a.	0.001	-0.002	0.001	-0.018**	0.009*	-0.000	0.002	-0.002	0.000	-0.002	-0.001	0.014	-0.001	-0.002	0.001
occupation	n.a.	0.013	-0.011	0.012	-0.034	0.002	0.010	-0.009	0.001	0.012	-0.046*	0.055	0.063**	-0.029	0.010	0.044
Constant	n.a.	-0.071	0.153***	-0.128	0.260***	-0.002	-0.013	0.034*	0.017	0.156***	0.131***	-0.025	-0.001	-0.009	0.036	0.026
private sector disadvantage																
age	n.a	-0.001*	0.001	-0.001	0.001	0.001	0.000	-0.001*	-0.000	-0.001**	0.002**	0.000	0.001*	-0.000	-0.001	0.000
education	n.a	0.000	-0.001	0.010	-0.004***	0.001	0.000	0.001	-0.002	0.002*	0.001	0.002	-0.002	0.002***	0.003	0.003*
gender	n.a	0.000	0.001**	0.000	0.001	0.001**	0.001	-0.001	-0.001*	-0.000*	-0.001	0.000	-0.001*	-0.000	-0.000	0.001***
occupation	n.a	-0.001	0.004	0.001	0.005***	-0.006**	0.003	-0.004**	-0.003*	0.000	-0.000	0.004*	0.001	0.002	-0.000	0.002
Constant	n.a	-0.008***	0.012**	-0.000	0.029***	0.015***	-0.005	0.007**	0.002	0.021***	0.019***	-0.001	0.002	0.001	0.012**	0.007**
observ.	n.a	1,661	6,318	2,456	2,857	2,563	1,734	1,468	1,764	4,825	2,443	2,639	1,607	5,829	3,543	3,512

*Notes: (1) Robust standard errors are calculated; (2) *, **, *** significant at 10%, 5% and 1% level, respectively.*

Table A7. OR Decomposition Results 2011 (EU SILC 2012)

overall	AT	BE	BG	CH	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HR	HU
public	3.030***	3.042***	0.835***	3.763***	2.722***	1.757***	2.966***	3.397***	1.693***	2.262***	2.661***	3.109***	2.709***	1.726***	1.346***
private	2.996***	3.007***	0.652***	3.658***	2.237***	1.631***	2.920***	3.365***	1.556***	2.098***	2.401***	3.044***	2.720***	1.517***	1.190***
difference	**0.034**	**0.035***	**0.182*****	**0.105*****	**0.485*****	**0.126*****	**0.046*****	**0.032**	**0.137*****	**0.164*****	**0.260*****	**0.065*****	**-0.011**	**0.209*****	**0.156*****
explained	0.053***	0.017	0.151***	0.037**	0.184***	0.063***	0.048***	0.058***	0.102***	0.101***	0.115***	0.079***	0.024***	0.127***	0.096***
publ. adv.	-0.017	0.015	0.028	0.061***	0.252***	0.056***	-0.001	-0.023	0.031	0.049***	0.121***	-0.012	-0.030***	0.073***	0.051***
priv. dis.	-0.002	0.004	0.004	0.006***	0.048***	0.007***	-0.000	-0.003	0.005	0.015***	0.024***	-0.001	-0.005***	0.009***	0.010***
unexplained#	-0.019	0.019	0.032	0.067	0.3	0.063	-0.001	-0.026	0.036	0.064	0.145	-0.013	-0.035	0.082	0.061
% unexpl.	-55.9%	54.3%	17.6%	63.8%	61.9%	50.0%	-2.2%	-81.3%	26.3%	39.0%	55.8%	-20.0%	318.2%	39.2%	39.1%
explained															
age	0.031***	0.032***	0.002	0.003	0.027***	0.002	0.009***	-0.000	0.003	0.033***	0.042***	0.011***	0.019***	0.026***	0.000
education	0.001	-0.012*	0.057***	0.028***	0.022***	0.039***	0.012**	0.040***	0.067***	0.016***	0.047***	0.027***	-0.006	0.053***	0.062***
gender	-0.000	-0.004	0.011*	0.006*	0.038***	-0.006	-0.007**	0.002	-0.017	0.019***	0.007*	-0.004	-0.000	0.002	-0.004
occupation	0.022*	0.001	0.080***	-0.000	0.097***	0.028***	0.034***	0.017**	0.049***	0.033***	0.019***	0.045***	0.011*	0.047***	0.037***
public sector advantage															
age	0.005	-0.001	0.000	-0.016	-0.006	-0.001	0.003	-0.002	-0.001	-0.010*	-0.011*	-0.000	0.009**	0.005	-0.003
education	-0.019	-0.011	-0.012	0.005	0.007	0.065	-0.051**	0.020	-0.061	0.003	-0.029***	-0.014	-0.011	0.006	0.004
gender	-0.008	-0.003	0.001	-0.030	-0.003	0.001	-0.012***	-0.005	0.016**	-0.012**	-0.002	0.001	0.001	-0.000	-0.000
occupation	-0.009	0.007	0.043*	0.019	-0.032	0.037**	-0.059***	-0.032	0.022	0.148***	-0.051**	0.016	0.005	0.059*	0.018
Constant	0.015	0.023	-0.004	0.084**	0.286***	-0.045	0.118***	-0.003	0.056	-0.080**	0.214***	-0.015	-0.034*	0.002	0.031
private sector disadvantage															
age	-0.001	-0.001	-0.000	-0.001*	-0.001*	-0.000	0.001	-0.000	-0.001	-0.002	0.001*	-0.000	-0.000	0.000	0.000
education	-0.001	-0.004	0.002	0.001	0.004**	0.005***	-0.005**	0.001	-0.001	0.002	-0.002***	-0.001	-0.002	0.003*	0.004**
gender	-0.001	-0.001	-0.000	-0.002	-0.002***	-0.000	-0.004***	-0.000	0.001*	-0.000	0.000	-0.000	0.000	0.000	-0.000
occupation	-0.001	0.002	0.006	0.001	0.011	0.002	-0.000	-0.003**	-0.002	0.005**	0.007***	-0.001	0.000	0.015*	-0.002
Constant	0.001	0.007*	-0.003	0.006**	0.036***	0.001	0.009**	-0.000	0.008**	0.010**	0.019***	0.000	-0.004	-0.008	0.008*
observ.	1,940	2,077	2,427	2,346	2,715	3,872	4,559	1,251	2,460	1,836	4,224	5,638	4,436	2,082	3,996

*Notes: (1) Robust standard errors are calculated; (2) *, **, *** significant at 10%, 5% and 1% level, respectively.*

Table A8. OR Decomposition Results 2012 (EU SILC 2013) continued…

overall	IE	IS	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK
public	3.212***	2.825***	2.819***	1.348***	3.473***	1.576***	2.302***	3.412***	3.474***	1.649***	2.134***	0.743***	3.042***	2.402***	1.487***	2.836***
private	3.081***	2.824***	2.629***	1.162***	3.179***	1.298***	2.311***	3.292***	3.522***	1.361***	1.792***	0.570***	3.031***	2.228***	1.413***	2.761***
difference	**0.131*** **	**0.000**	**0.190*** **	**0.185*** **	**0.294*** **	**0.278*** **	**-0.009**	**0.119*** **	**-0.048** **	**0.289*** **	**0.342*** **	**0.173*** **	**0.011**	**0.174*** **	**0.074*** **	**0.075*** **
explained	0.049**	0.050***	0.097***	0.111***	0.043**	0.227***	-0.012	0.070***	0.034**	0.153***	0.179***	0.109***	0.038*	0.171***	0.035***	0.018
publ. adv.	0.070***	-0.044**	0.079***	0.067**	0.210***	0.044*	0.002	0.041***	-0.072***	0.116***	0.139***	0.057***	-0.025	0.003	0.031***	0.050***
priv. dis.	0.012***	-0.006*	0.014***	0.007**	0.040***	0.007*	0.001	0.009***	-0.011***	0.019***	0.025***	0.006***	-0.002	0.000	0.009***	0.007***
unexplained#	0.082	-0.05	0.093	0.074	0.25	0.051	0.003	0.05	-0.083	0.135	0.164	0.063	-0.027	0.003	0.04	0.057
% unexpl.	62.6%	n.a.	48.9%	40.0%	85.0%	18.3%	-33.3%	42.0%	172.9%	46.7%	48.0%	36.4%	-245.5%	1.7%	54.1%	76.0%
explained																
age	0.053***	0.014*	0.045***	0.003	0.010	0.005	0.011**	0.017*	0.006	0.003	0.055***	-0.003	0.009	0.019***	0.005***	0.008**
education	-0.011	0.029***	0.020***	0.028***	-0.017**	0.094***	-0.009	0.042***	0.028***	0.070***	0.051***	0.069***	0.015***	0.095***	0.038***	0.012
gender	0.001	-0.028***	0.006**	0.011	0.016***	-0.008	-0.003	-0.003	-0.015**	-0.004	0.026***	0.009*	-0.018*	-0.003	-0.035***	-0.005
occupation	0.006	0.035***	0.026***	0.069***	0.035***	0.136***	-0.011	0.014*	0.014**	0.085***	0.047***	0.035***	0.032***	0.059***	0.026***	0.003
public sector advantage																
age	-0.004	0.010	-0.032***	-0.008	-0.004	-0.001	-0.001	-0.013	-0.012*	0.001	0.006	0.003	0.006	-0.007	0.007***	0.006
education	-0.010	0.016	-0.018***	0.058	-0.006	-0.054*	0.010**	-0.023	-0.076*	0.007	0.008*	0.029	0.026	0.055*	-0.080	-0.024
gender	-0.007	0.001	-0.007**	-0.001	-0.009	0.011**	-0.006	0.004	-0.000	-0.002	-0.006*	0.003	0.006	-0.002	-0.002	-0.002
occupation	-0.045**	0.031	-0.006	0.051*	-0.084***	0.016	0.010	-0.036**	0.034	-0.037	-0.083***	0.028	-0.086***	0.060**	0.037***	-0.065*
Constant	0.136***	-0.102***	0.141***	-0.033	0.313***	0.071**	-0.011	0.109***	-0.018	0.147***	0.213***	-0.005	0.024	-0.102**	0.068	0.134***
private sector disadvantage																
age	-0.000	0.000	0.000	-0.003**	0.000	0.002***	0.001	-0.002	-0.001**	-0.000	-0.000	0.001	0.000	-0.001*	-0.000	0.001*
education	-0.004	-0.000	-0.000	0.008*	-0.004**	-0.002	0.003**	-0.001	-0.006**	0.001	0.000	0.002	0.000	0.001**	0.001	0.001
gender	-0.001**	0.000	0.000	0.000	0.002	0.001*	-0.001	0.001	0.000	-0.001**	-0.000	0.000	-0.000	-0.000	-0.000	0.001
occupation	-0.002	0.001	0.005	0.002	0.005**	-0.005*	0.003	-0.003	-0.002	0.001	-0.000	0.003	-0.005**	0.002	0.003	-0.003**
Constant	0.019***	-0.007**	0.008	0.000	0.037***	0.012**	-0.005	0.014***	-0.002	0.018***	0.025***	0.001	0.002	-0.001	0.006	0.008***
observ.	1,536	1,671	6,025	2,268	1,879	2,525	1,837	1,445	1,866	4,725	2,633	2,822	1,497	5,493	3,436	3,464

*Notes: (1) Robust standard errors are calculated; (2) *, **, *** significant at 10%, 5% and 1% level, respectively.*

Table A8. OR Decomposition Results 2012 (EU SILC 2013)

overall	AT	BE	BG	CH	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HR	HU
public	3.052***	3.075***	0.852***	3.749***	2.636***	1.712***	2.991***	3.390***	1.817***	2.157***	2.704***	3.133***	2.701***	1.702***	1.272***
private	3.035***	3.042***	0.654***	3.632***	2.190***	1.617***	2.938***	3.388***	1.611***	1.993***	2.384***	3.053***	2.719***	1.485***	1.222***
difference	**0.017**	**0.033**	**0.198*** **	**0.117*** **	**0.446*** **	**0.095*** **	**0.053*** **	**0.002**	**0.206*** **	**0.164*** **	**0.319*** **	**0.079*** **	**-0.018**	**0.217*** **	**0.050** **
explained	0.038**	0.025**	0.133***	0.043**	0.160***	0.044***	0.058***	0.045***	0.154***	0.106***	0.134***	0.075***	0.018*	0.129***	0.070***
publ. adv.	-0.018	0.006	0.057*	0.067***	0.238***	0.046***	-0.004	-0.037***	0.045*	0.045***	0.153***	0.004	-0.031**	0.078***	-0.017
priv. dis.	-0.003	0.001	0.008*	0.007***	0.047***	0.006***	-0.001	-0.006***	0.007*	0.013***	0.032***	0.000	-0.005**	0.010***	-0.004
unexplained#	-0.021	0.007	0.065	0.074	0.285	0.052	-0.005	-0.043	0.052	0.058	0.185	0.004	-0.036	0.088	-0.021
% unexpl.	-123.5%	21.2%	32.8%	63.2%	63.9%	54.7%	-9.4%	-2150.0%	25.2%	35.4%	58.0%	5.1%	200.0%	40.6%	-42.0%
explained															
age	0.029***	0.044***	0.002	0.017**	0.029***	0.002	0.012***	0.004	0.008*	0.037***	0.053***	0.008***	0.016***	0.013**	-0.001
education	-0.007	-0.021***	0.076***	0.027***	0.024***	0.031***	0.005	0.019***	0.090***	0.015***	0.051***	0.025***	-0.002	0.043***	0.052***
gender	0.001	-0.001	0.001	0.003	0.025***	-0.006	-0.000	0.006	-0.014	0.015***	0.003	0.001	-0.004	0.011*	-0.003
occupation	0.014	0.004	0.055***	-0.004	0.083***	0.016**	0.041***	0.015*	0.071***	0.039***	0.029***	0.041***	0.007	0.062***	0.022***
public sector advantage															
age	-0.000	-0.000	0.013	-0.011	-0.003	-0.001	0.014***	0.001	-0.009	-0.010*	-0.020**	0.007	0.009**	0.003	0.002
education	0.021	0.003	-0.016	-0.061**	0.005	0.116***	0.013	0.009	-0.059	0.021	-0.043***	-0.026*	-0.002	-0.004	0.028***
gender	-0.007	-0.007*	-0.001	-0.025*	0.000	0.000	-0.016***	-0.006	0.016**	-0.004	-0.003*	-0.000	-0.000	0.005	0.000
occupation	-0.020	-0.001	0.078***	-0.019	-0.032	0.069***	-0.062***	0.033*	-0.012	0.019	0.058	0.069***	0.007	0.057*	-0.012
Constant	-0.011	0.012	-0.017	0.184***	0.268***	-0.139***	0.047	-0.074***	0.108*	0.019	0.162***	-0.045*	-0.044**	0.017	-0.035*
private sector disadvantage															
age	-0.001*	0.000	0.002**	-0.000	-0.001	-0.000	0.002**	-0.001	-0.000	-0.003*	0.001	0.000	0.000	0.000	0.001**
education	0.003	0.002	0.001	0.002**	0.004*	0.005***	0.000	0.000	-0.001	0.005**	-0.004***	-0.001	-0.000	0.002	0.010***
gender	-0.001	-0.002**	-0.000	-0.001	-0.001**	-0.000	-0.004***	-0.000	0.001*	0.000	0.000	-0.000	-0.000	0.000*	-0.000
occupation	-0.003	-0.000	0.011**	-0.001	0.011*	0.005***	-0.003	-0.003*	-0.003*	0.012	0.009***	0.001	0.001	0.009	-0.005
Constant	-0.001	0.001	-0.006	0.007***	0.035***	-0.004	0.003	-0.002	0.011***	-0.002	0.026***	-0.000	-0.006**	-0.002	-0.010*
observ.	1,974	2,088	2,185	2,153	2,413	3,699	4,209	1,254	2,576	2,217	4,440	5,257	4,243	2,202	3,674

*Notes: (1) Robust standard errors are calculated; (2) *, **, *** significant at 10%, 5% and 1% level, respectively.*

Table A9. OR Decomposition Results 2013 (EU SILC 2014) continued…

overall	IE	IS	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK
public	3.178***	n.a.	2.858***	1.418***	3.494***	1.596***	2.385***	3.377***	3.498***	1.630***	2.151***	0.835***	3.012***	2.362***	1.530***	2.899***
private	3.067***	n.a.	2.637***	1.234***	3.179***	1.386***	2.337***	3.276***	3.536***	1.393***	1.806***	0.635***	3.075***	2.219***	1.439***	2.802***
difference	**0.111*** **	**n.a**	**0.221*** **	**0.184*** **	**0.315*** **	**0.210*** **	**0.048** **	**0.101*** **	**-0.038* **	**0.238*** **	**0.345*** **	**0.200*** **	**-0.063**	**0.143*** **	**0.091*** **	**0.097*** **
explained	0.053***	n.a.	0.121***	0.098***	0.061***	0.170***	0.009	0.057***	0.047***	0.142***	0.173***	0.117***	0.014	0.157***	0.042***	0.027*
publ. adv.	0.049***	n.a.	0.085***	0.076***	0.212***	0.035	0.031**	0.038*	-0.073***	0.082***	0.148***	0.075***	-0.068**	-0.013	0.039***	0.063***
priv. dis.	0.009***	n.a.	0.015***	0.009***	0.041***	0.005	0.008**	0.007*	-0.011***	0.014***	0.025***	0.008***	-0.009**	-0.002	0.010***	0.008***
unexplained#	0.058	n.a.	0.1	0.085	0.253	0.04	0.039	0.045	-0.084	0.096	0.173	0.083	-0.077	-0.015	0.049	0.071
% unexpl.	52.3%	n.a.	45.2%	46.2%	80.3%	19.0%	81.3%	44.6%	221.1%	40.3%	50.1%	41.5%	122.2%	-10.5%	53.8%	73.2%
explained																
age	0.046***	n.a.	0.055***	0.007**	0.017*	0.003	0.021***	0.030***	0.015***	0.003	0.048***	0.002	0.008	0.021***	0.003*	0.014***
education	0.003	n.a.	0.019***	0.033***	-0.012*	0.081***	0.015	0.019*	0.031***	0.075***	0.043***	0.063***	0.025***	0.082***	0.041***	0.016**
gender	-0.011**	n.a.	0.012***	-0.005	0.017***	-0.019**	-0.011***	-0.001	-0.018**	-0.006	0.028***	0.003	-0.030***	0.001	-0.030***	-0.004
occupation	0.015	n.a.	0.035***	0.063***	0.040***	0.106***	-0.016**	0.009	0.018***	0.070***	0.053***	0.048***	0.011	0.052***	0.028***	0.000
public sector advantage																
age	-0.031***	n.a.	-0.033***	-0.005	-0.003	0.004	-0.007*	-0.024	-0.010	-0.000	-0.001	-0.002	0.011	0.003	0.005**	-0.005
education	-0.010	n.a.	-0.027***	0.127***	-0.006	-0.065	0.001	-0.002	-0.027	-0.029	0.006	0.055**	0.073	0.039*	-0.162	-0.008
gender	-0.000	n.a.	-0.007**	0.008	-0.017	0.008	0.001	-0.028**	-0.000	-0.002	-0.006*	0.002	0.003	-0.002	-0.000	-0.000
occupation	-0.039*	n.a.	0.043**	0.024	-0.074**	0.037*	0.023	-0.150*	-0.065*	0.008	-0.007	0.039	0.053	-0.013	0.057***	0.001
Constant	0.130***	n.a.	0.110***	-0.077	0.312***	0.049	0.013	0.242**	0.029	0.105***	0.156***	-0.018	-0.208***	-0.041	0.139	0.075**
private sector disadvantage																
age	0.001	n.a.	0.000	-0.001	-0.000	0.001	0.001**	-0.002	-0.001	-0.000	-0.000	0.001	0.000	0.000	-0.000	-0.000
education	-0.002	n.a.	-0.001*	0.002	-0.002**	-0.003	0.001	0.002	-0.003*	0.000	-0.001	0.003**	0.003	0.002**	-0.008	0.000
gender	-0.000	n.a.	0.000	0.001	0.001	0.000	0.001	-0.006	-0.001	-0.000**	-0.000	0.000	0.000	-0.000**	-0.000	0.000
occupation	-0.002	n.a.	0.012**	-0.001	0.006***	-0.003	0.006**	-0.008	-0.006**	0.000	0.002	0.004	-0.004	-0.003**	0.007**	-0.001
Constant	0.012***	n.a.	0.004	0.008*	0.036***	0.010**	-0.002	0.020**	-0.001	0.013***	0.025***	-0.000	-0.009	0.000	0.012	0.009***
observ.	1,804	n.a.	6,424	2,173	1,956	2,464	1,838	1,507	2,163	4,844	2,900	2,792	1,043	5,239	3,439	3,705

*Notes: (1) Robust standard errors are calculated; (2) *, **, *** significant at 10%, 5% and 1% level, respectively.*

Table A9. OR Decomposition Results 2013 (EU SILC 2014)

Country	AT		BE		BG		CY		CH		CZ		DE		DK	
Quantile	2007	2013	2007	2013	2007	2013	2007	2013	2007	2013	2007	2013	2007	2013	2007	2013
Differences between observable distributions																
0.1	0.127*	0.204*	0.063	0.059*	0.129*	0.124	0.531*	0.865*	n.a.	0.297*	0.292*	0.256*	0.257*	0.396*	0.146*	0.021
0.2	0.126*	0.126*	0.032	0.046	0.131*	0.191*	0.455*	0.61*	n.a.	0.256*	0.291*	0.228*	0.159*	0.264*	0.093*	0.018
0.3	0.115*	0.077*	0.010	0.051	0.131*	0.246*	0.406*	0.539*	n.a.	0.228*	0.271*	0.179*	0.088*	0.171*	0.059	0.011
0.4	0.097*	0.035	-0.003	0.048	0.121*	0.255*	0.378*	0.471*	n.a.	0.201*	0.237*	0.146*	0.032*	0.100*	0.039	0.005
0.5	0.074*	0.004	-0.015	0.046	0.143*	0.269*	0.339*	0.429*	n.a.	0.158*	0.205*	0.121*	-0.014	0.037	0.018	0.000
0.6	0.046	-0.027	-0.030	0.042	0.147*	0.251*	0.314*	0.372*	n.a.	0.120*	0.192*	0.090*	-0.060	-0.020	-0.004	-0.002
0.7	0.019	-0.055	-0.049	0.029	0.168*	0.221*	0.304*	0.31*	n.a.	0.076*	0.174*	0.060*	-0.109*	-0.084*	-0.027	-0.001
0.8	-0.006	-0.096*	-0.065	0.024	0.169*	0.187*	0.274*	0.239*	n.a.	0.019	0.135*	0.014	-0.165*	-0.145*	-0.039	-0.008
0.9	-0.037	-0.145*	-0.096*	-0.004	0.145	0.144	0.199*	0.151*	n.a.	-0.084	0.076*	-0.071	-0.247*	-0.217*	-0.070	-0.013
Effects of characteristics																
0.1	0.139*	0.059*	0.058*	0.04	0.101	0.155	0.145*	0.157*	n.a.	0.018	0.227*	0.20*	0.040	0.068*	0.030	0.017
0.2	0.122*	0.049*	0.046*	0.046	0.133*	0.188*	0.145*	0.126*	n.a.	0.035	0.155*	0.106*	0.041*	0.054*	0.022	0.020*
0.3	0.101*	0.045*	0.040*	0.044	0.144*	0.203*	0.130*	0.132*	n.a.	0.037	0.140*	0.071*	0.036*	0.048*	0.011	0.021*
0.4	0.083*	0.038	0.042*	0.032	0.141*	0.186*	0.126*	0.125*	n.a.	0.041	0.105*	0.071*	0.033*	0.040*	0.012	0.017
0.5	0.069*	0.045	0.036*	0.024	0.167*	0.175*	0.101*	0.129*	n.a.	0.036	0.088*	0.067*	0.031*	0.037*	0.001	0.016
0.6	0.063*	0.028	0.027	0.020	0.168*	0.126	0.091*	0.113*	n.a.	0.024	0.098*	0.051*	0.029*	0.03*	0.002	0.014
0.7	0.065*	0.018	0.019	0.010	0.171*	0.099	0.106*	0.103*	n.a.	0.025	0.085*	0.035	0.029*	0.024*	-0.001	0.013
0.8	0.072*	0.009	0.015	0.001	0.165*	0.103	0.116*	0.079*	n.a.	0.039	0.071*	0.033	0.031*	0.023*	-0.013	0.010
0.9	0.064	0.015	-0.002	-0.021	0.106	0.159*	0.118*	0.047	n.a.	0.039	0.058*	0.021	0.026	0.019	-0.047	0.005
Effects of coefficients																
0.1	-0.012	0.145*	0.005	0.019	0.028	-0.031	0.386*	0.708*	n.a.	0.279*	0.065	0.056	0.217*	0.329*	0.116	0.004
0.2	0.003	0.077*	-0.015	0.001	-0.002	0.003	0.309*	0.483*	n.a.	0.221*	0.136*	0.123*	0.118*	0.210*	0.071	-0.001
0.3	0.014	0.032	-0.029	0.007	-0.013	0.043	0.277*	0.407*	n.a.	0.191*	0.132*	0.108*	0.052*	0.123*	0.048	-0.010
0.4	0.013	-0.003	-0.044	0.015	-0.020	0.069	0.252*	0.346*	n.a.	0.160*	0.132*	0.075*	0.000	0.060*	0.028	-0.012
0.5	0.004	-0.041	-0.051*	0.021	-0.024	0.094	0.238*	0.300*	n.a.	0.122*	0.117*	0.054	-0.045*	0.000	0.017	-0.016
0.6	-0.017	-0.055	-0.057*	0.021	-0.021	0.126	0.223*	0.259*	n.a.	0.096*	0.094*	0.039	-0.089*	-0.050*	-0.006	-0.016
0.7	-0.046	-0.073*	-0.068*	0.018	-0.003	0.121	0.198*	0.207*	n.a.	0.051	0.088*	0.025	-0.138*	-0.108*	-0.026	-0.015
0.8	-0.078	-0.105*	-0.080*	0.023	0.004	0.085	0.157*	0.161*	n.a.	-0.020	0.065*	-0.018	-0.195*	-0.168*	-0.026	-0.019
0.9	-0.101*	-0.160*	-0.094*	0.017	0.039	-0.015	0.081	0.104*	n.a.	-0.124*	0.018	-0.093*	-0.273*	-0.236*	-0.024	-0.018
Obs. publ.	269	286	438	377	438	259	303	401	n.a.	199	504	418	897	821	169	1817
Obs. priv.	1740	1688	1797	1711	1797	1926	1689	2012	n.a.	1954	4760	3281	3775	3388	3339	1088

*Notes: * indicates significant at the 5% level. Standard errors were calculated using bootstrap (500 iterations).*

Table A10. Quantile Decomposition Results by Country for the years 2007 and 2013, continued…

Country	EE		EL		ES		FI		FR		HR		HU		IE	
Quantile	2007	2013	2007	2013	2007	2013	2007	2013	2007	2013	2007	2013	2007	2013	2007	2013
Differences between observable distributions																
0.1	0.185*	0.527*	0.369*	0.326*	0.380*	0.574*	0.210*	0.173*	0.049	0.072	n.a.	0.294*	0.289*	-0.191*	0.337*	0.352*
0.2	0.213*	0.429*	0.421*	0.266*	0.399*	0.507*	0.164*	0.141*	0.033	0.040	n.a.	0.271*	0.354*	-0.077	0.277*	0.299*
0.3	0.193*	0.343*	0.422*	0.238*	0.400*	0.442*	0.158*	0.124*	0.018	0.013	n.a.	0.278*	0.374*	0.018	0.24*	0.243*
0.4	0.173*	0.257*	0.416*	0.204*	0.386*	0.402*	0.152*	0.112*	0.004	-0.002	n.a.	0.272*	0.372*	0.076	0.211*	0.196*
0.5	0.128*	0.182*	0.402*	0.174*	0.364*	0.344*	0.132*	0.104*	-0.026	-0.013	n.a.	0.240*	0.356*	0.112*	0.180*	0.139*
0.6	0.086	0.122*	0.367*	0.149*	0.337*	0.290*	0.122*	0.086*	-0.053*	-0.022	n.a.	0.200*	0.336*	0.140*	0.159*	0.090*
0.7	0.054	0.077	0.319*	0.111*	0.303*	0.223*	0.089*	0.062	-0.083*	-0.041	n.a.	0.166*	0.331*	0.176*	0.124*	0.025
0.8	-0.010	0.011	0.270*	0.071	0.254*	0.143*	0.037	0.009	-0.119*	-0.070*	n.a.	0.144*	0.340*	0.185*	0.087	-0.029
0.9	-0.066	-0.044	0.187*	0.012	0.169*	0.034	-0.030	-0.038	-0.176*	-0.119*	n.a.	0.146	0.313*	0.161*	0.017	-0.130*
Effects of characteristics																
0.1	0.115	0.263	0.130*	0.103*	0.157*	0.191*	0.098	0.142	0.027	0.038	n.a.	0.107	0.158*	-0.012	0.062	0.052
0.2	0.162*	0.192	0.125*	0.092*	0.154*	0.160*	0.092*	0.116*	0.014	0.033*	n.a.	0.114*	0.197*	0.016	0.079*	0.022
0.3	0.159*	0.157*	0.108*	0.096*	0.148*	0.134*	0.103*	0.104*	0.012	0.024	n.a.	0.169*	0.198*	0.054	0.086*	0.004
0.4	0.164*	0.147*	0.119*	0.092*	0.145*	0.130*	0.096*	0.095*	0.011	0.026	n.a.	0.175*	0.176*	0.089*	0.083*	0.004
0.5	0.126*	0.140*	0.115*	0.086*	0.138*	0.108*	0.089*	0.085*	0.004	0.033*	n.a.	0.152*	0.158*	0.103*	0.070	0.006
0.6	0.112*	0.132*	0.104*	0.094*	0.132*	0.099*	0.103*	0.075*	0.002	0.035*	n.a.	0.122*	0.130*	0.126*	0.073	0.006
0.7	0.099*	0.128*	0.090*	0.081*	0.129*	0.086*	0.082*	0.072*	-0.003	0.032*	n.a.	0.124*	0.147*	0.142*	0.059	-0.001
0.8	0.068	0.103	0.090*	0.081*	0.120*	0.069*	0.056*	0.045	-0.018	0.026	n.a.	0.130*	0.159*	0.130*	0.043	-0.002
0.9	0.030	0.092	0.076*	0.079*	0.093*	0.049	0.041	0.035	-0.034	0.036	n.a.	0.169*	0.152*	0.098*	0.047	0.002
Effects of coefficients																
0.1	0.070	0.264	0.239*	0.223*	0.223*	0.383*	0.112	0.031	0.022	0.034	n.a.	0.188*	0.131*	-0.179*	0.275*	0.300*
0.2	0.051	0.237*	0.296*	0.175*	0.244*	0.347*	0.073	0.025	0.019	0.007	n.a.	0.157*	0.157*	-0.093*	0.198*	0.276*
0.3	0.034	0.185*	0.314*	0.142*	0.252*	0.308*	0.055	0.020	0.006	-0.011	n.a.	0.109*	0.176*	-0.036	0.154*	0.239*
0.4	0.009	0.110	0.297*	0.112*	0.240*	0.272*	0.055	0.017	-0.007	-0.028	n.a.	0.096*	0.196*	-0.013	0.128*	0.191*
0.5	0.002	0.042	0.287*	0.088*	0.226*	0.236*	0.043	0.020	-0.031	-0.047*	n.a.	0.088*	0.198*	0.009	0.109*	0.133*
0.6	-0.025	-0.010	0.263*	0.055*	0.205*	0.191*	0.019	0.011	-0.055*	-0.057*	n.a.	0.078	0.206*	0.014	0.086	0.084*
0.7	-0.045	-0.052	0.229*	0.029	0.174*	0.137*	0.007	-0.010	-0.08*	-0.073*	n.a.	0.042	0.184*	0.034	0.065	0.026
0.8	-0.079	-0.092	0.180*	-0.009	0.134*	0.073*	-0.019	-0.035	-0.101*	-0.096*	n.a.	0.014	0.180*	0.054	0.044	-0.028
0.9	-0.096	-0.136	0.111*	-0.067	0.075*	-0.015	-0.071	-0.073	-0.142*	-0.155*	n.a.	-0.023	0.161*	0.063	-0.030	-0.132*
Obs. publ.	243	347	492	492	985	766	489	423	865	627	n.a.	239	464	633	272	266
Obs. priv.	1986	2229	1897	1725	4545	3674	4891	4834	3470	3616	n.a.	1963	3023	3041	1240	1538

*Notes: * indicates significant at the 5% level. Standard errors were calculated using bootstrap (500 iterations).*

Table A10. Quantile Decomposition Results by Country for the years 2007 and 2013, continued…

Country	IS		IT		LT		LU		LV		MT		NL		NO	
Quantile	2007	2013	2007	2013	2007	2013	2007	2013	2007	2013	2007	2013	2007	2013	2007	2013
Differences between observable distributions																
0.1	0.189*	n.a.	0.337*	0.502*	0.240*	0.190*	0.529*	0.532*	0.525*	0.412*	0.066	0.166*	0.239*	0.093*	0.155*	0.022
0.2	0.163*	n.a.	0.278*	0.338*	0.286*	0.300*	0.486*	0.513*	0.597*	0.423*	0.026	0.143*	0.185*	0.081*	0.070	0.013
0.3	0.146*	n.a.	0.246*	0.274*	0.281*	0.298*	0.42*	0.443*	0.554*	0.375*	0.019	0.138*	0.151*	0.075*	0.030	-0.001
0.4	0.125*	n.a.	0.221*	0.231*	0.255*	0.308*	0.351*	0.379*	0.488*	0.323*	-0.007	0.091*	0.125*	0.062*	-0.022	-0.017
0.5	0.111*	n.a.	0.195*	0.195*	0.244*	0.281*	0.268*	0.307*	0.429*	0.269*	-0.025	0.072*	0.101*	0.053*	-0.043	-0.031
0.6	0.102*	n.a.	0.165*	0.16*	0.201*	0.222*	0.211*	0.269*	0.384*	0.221*	-0.060	0.031	0.061*	0.04	-0.077	-0.048*
0.7	0.078	n.a.	0.130*	0.117*	0.183*	0.161*	0.166*	0.223*	0.311*	0.146*	-0.086*	-0.001	0.022	0.038	-0.125*	-0.063*
0.8	0.031	n.a.	0.079*	0.061*	0.130*	0.071	0.091*	0.183*	0.239*	0.042	-0.140*	-0.026	-0.015	0.006	-0.176*	-0.073*
0.9	-0.025	n.a.	0.001	-0.019	0.033	-0.021	-0.038	0.123*	0.165*	-0.077	-0.201*	-0.09	-0.100*	-0.031	-0.274*	-0.082*
Effects of characteristics																
0.1	0.126	n.a.	0.083*	0.103*	0.163*	0.227*	0.046	0.085*	0.267*	0.301*	0.002	0.022	0.030	0.017	0.012	0.015
0.2	0.173*	n.a.	0.078*	0.086*	0.210*	0.259*	0.037	0.073*	0.330*	0.288*	-0.006	0.007	0.046	0.024	0.015	0.005
0.3	0.157*	n.a.	0.076*	0.089*	0.216*	0.235*	0.040	0.050	0.276*	0.246*	-0.008	-0.003	0.049	0.027*	0.023	0.003
0.4	0.124*	n.a.	0.071*	0.086*	0.198*	0.220*	0.039	0.039	0.222*	0.216*	-0.021	-0.016	0.047	0.025*	0.011	0.000
0.5	0.108*	n.a.	0.066*	0.083*	0.186*	0.171*	0.005	0.024	0.214*	0.193*	-0.023	-0.019	0.040	0.029*	0.015	-0.002
0.6	0.102*	n.a.	0.060*	0.078*	0.144*	0.123*	-0.013	0.018	0.203*	0.174*	-0.017	-0.030	0.025	0.030*	0.012	-0.007
0.7	0.075	n.a.	0.057*	0.069*	0.153*	0.075	-0.016	0.006	0.183*	0.145*	-0.010	-0.023	0.023	0.030*	0.015	-0.008
0.8	0.060	n.a.	0.045*	0.063*	0.122*	0.034	-0.044	-0.011	0.153*	0.113*	-0.010	-0.023	0.032	0.028*	0.025	-0.010
0.9	0.033	n.a.	0.042*	0.067*	0.110*	0.019	-0.085	-0.049	0.152*	0.098*	-0.012	-0.028	0.014	0.024	0.031	-0.012
Effects of coefficients																
0.1	0.063	n.a.	0.254*	0.399*	0.078	-0.037	0.483*	0.447*	0.258*	0.111	0.064	0.144*	0.209*	0.076*	0.143	0.007
0.2	-0.010	n.a.	0.200*	0.252*	0.076	0.041	0.450*	0.439*	0.267*	0.135*	0.032	0.136*	0.138*	0.057*	0.055	0.008
0.3	-0.011	n.a.	0.170*	0.185*	0.065	0.063	0.380*	0.393*	0.278*	0.128*	0.027	0.140*	0.102*	0.048*	0.007	-0.004
0.4	0.001	n.a.	0.149*	0.145*	0.058	0.088	0.312*	0.340*	0.266*	0.107*	0.014	0.107*	0.079*	0.037*	-0.033	-0.017
0.5	0.002	n.a.	0.129*	0.111*	0.057	0.110	0.263*	0.284*	0.216*	0.076	-0.002	0.091*	0.061*	0.024	-0.057	-0.029*
0.6	-0.001	n.a.	0.104*	0.082*	0.057	0.099	0.225*	0.251*	0.181*	0.047	-0.044	0.061*	0.036	0.010	-0.089*	-0.042*
0.7	0.003	n.a.	0.073*	0.047*	0.030	0.086	0.182*	0.218*	0.128*	0.002	-0.076*	0.023	-0.001	0.007	-0.140*	-0.054*
0.8	-0.028	n.a.	0.034*	-0.002	0.008	0.036	0.135*	0.193*	0.086	-0.071	-0.130*	-0.003	-0.047	-0.022	-0.201*	-0.063*
0.9	-0.058	n.a.	-0.041	-0.086*	-0.077	-0.040	0.047	0.172*	0.013	-0.174*	-0.189*	-0.062	-0.114*	-0.054	-0.304*	-0.069*
Obs. publ.	188	n.a.	1149	956	274	241	198	316	355	323	210	372	273	1272	124	1870
Obs. priv.	1694	n.a.	5265	5468	2015	1932	1780	1640	2003	2141	1106	1466	3547	1827	3117	2607

*Notes: * indicates significant at the 5% level. Standard errors were calculated using bootstrap (500 iterations).*

Table A10. Quantile Decomposition Results by Country for the years 2007 and 2013, continued…

Country	PL		PT		RO		SE		SI		SK		UK	
Quantile	2007	2013	2007	2013	2007	2013	2007	2013	2007	2013	2007	2013	2007	2013
Differences between observable distributions														
0.1	0.362*	0.269*	0.313*	0.307*	0.169*	0.147*	0.159	-0.023	0.300*	0.210*	0.247*	0.24*	0.175*	0.293*
0.2	0.364*	0.310*	0.305*	0.371*	0.177*	0.182*	0.096	-0.028	0.293*	0.227*	0.209*	0.197*	0.164*	0.256*
0.3	0.344*	0.299*	0.361*	0.408*	0.225*	0.215*	0.079	-0.044*	0.27*	0.224*	0.190*	0.145*	0.148*	0.216*
0.4	0.344*	0.302*	0.386*	0.449*	0.267*	0.239*	0.071	-0.044*	0.253*	0.208*	0.165*	0.130*	0.124*	0.175*
0.5	0.320*	0.285*	0.377*	0.467*	0.301*	0.257*	0.035	-0.045*	0.232*	0.185*	0.139*	0.072*	0.108*	0.136*
0.6	0.293*	0.266*	0.358*	0.444*	0.306*	0.243*	0.008	-0.043	0.205*	0.145*	0.119*	0.066*	0.076*	0.087*
0.7	0.258*	0.242*	0.332*	0.392*	0.317*	0.220*	-0.001	-0.038	0.180*	0.112*	0.108*	0.036	0.038	0.035
0.8	0.223*	0.201*	0.260*	0.318*	0.309*	0.201*	-0.060	-0.038	0.160*	0.085*	0.070*	0.033	-0.012	-0.038
0.9	0.154*	0.113*	0.134*	0.193*	0.310*	0.183*	-0.055	-0.029	0.082*	0.023	0.041	-0.012	-0.101	-0.125*
Effects of characteristics														
0.1	0.185*	0.168*	0.069	0.166*	0.114	0.11*	0.037	0.009	0.231*	0.254*	0.119*	0.099*	0.03	0.079
0.2	0.201*	0.192*	0.094*	0.175*	0.163*	0.145*	0.029	0.003	0.233*	0.212*	0.099*	0.066*	0.024	0.045
0.3	0.202*	0.175*	0.086	0.177*	0.242*	0.147*	0.027	0.000	0.220*	0.182*	0.072*	0.055*	-0.003	0.037
0.4	0.210*	0.181*	0.092*	0.191*	0.260*	0.155*	0.035	-0.002	0.215*	0.174*	0.069*	0.036*	-0.016	0.031
0.5	0.205*	0.182*	0.105*	0.177*	0.231*	0.133*	0.027	-0.002	0.215*	0.171*	0.040*	0.036*	-0.023	0.026
0.6	0.181*	0.166*	0.084	0.163*	0.190*	0.119*	0.027	-0.005	0.200*	0.148*	0.040	0.041*	-0.026	0.016
0.7	0.181*	0.154*	0.092	0.128*	0.175*	0.120*	0.032	-0.006	0.194*	0.155*	0.034	0.036	-0.033	0.006
0.8	0.152*	0.133*	0.080	0.111*	0.148*	0.101*	0.010	-0.009	0.202*	0.160*	0.034	0.023	-0.049	0.000
0.9	0.129*	0.084*	0.058	0.085*	0.112*	0.092*	-0.016	-0.008	0.159*	0.122*	0.040	0.015	-0.044	0.000
Effects of coefficients														
0.1	0.178*	0.101*	0.245*	0.141*	0.055	0.037	0.122	-0.032	0.069	-0.044	0.128*	0.141*	0.144*	0.213*
0.2	0.163*	0.118*	0.255*	0.196*	0.014	0.037	0.067	-0.032	0.060	0.015	0.109*	0.131*	0.140*	0.210*
0.3	0.142*	0.124*	0.275*	0.231*	-0.017	0.069	0.052	-0.045*	0.050	0.042	0.118*	0.090*	0.151*	0.178*
0.4	0.133*	0.120*	0.294*	0.258*	0.007	0.084	0.035	-0.042*	0.038	0.035	0.096*	0.094*	0.140*	0.144*
0.5	0.114*	0.102*	0.273*	0.289*	0.070	0.124*	0.008	-0.043*	0.017	0.014	0.099*	0.037	0.131*	0.110*
0.6	0.111*	0.100*	0.274*	0.281*	0.116	0.124*	-0.019	-0.038	0.005	-0.003	0.079*	0.024	0.102*	0.070*
0.7	0.077*	0.088*	0.240*	0.264*	0.141*	0.100*	-0.033	-0.032	-0.014	-0.043*	0.075*	0.000	0.071*	0.029
0.8	0.071*	0.067*	0.180*	0.207*	0.161*	0.100*	-0.070	-0.029	-0.042	-0.076*	0.036	0.010	0.038	-0.039
0.9	0.025	0.029	0.076	0.108*	0.198*	0.091	-0.039	-0.021	-0.077*	-0.099*	0.001	-0.026	-0.056	-0.125*
Obs. publ.	692	691	284	418	220	261	124	921	680	603	704	712	492	421
Obs. priv.	4442	4153	1330	2482	2558	2531	3679	1555	5724	4636	2780	2727	2883	3284

*Notes: * indicates significant at the 5% level. Standard errors were calculated using bootstrap (500 iterations).*

Table A10. Quantile Decomposition Results by Country for the years 2007 and 2013

	Fixed effects				Arellano Bond						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Total Gap	FE_t_q10	FE_t	FE_t_q90	FE_t_q90-q10	AB_t_q1	AB_t_q1	AB_t	AB_t	AB_t_q9	AB_t_q9	AB_t_q9-q1
freeze	0.063***	0.015	-0.021	-0.083***	0.013	0.022*	-0.000	0.011	-0.012	-0.005	-0.032**
cut	-0.001	-0.024*	-0.025	-0.023	-0.035**	-0.029*	-0.045***	-0.041***	-0.033**	-0.033***	-0.005
yr2008	0.002	0.012	0.021*	0.019		0.000		0.020**		0.028**	0.030
Yr2009	0.008	0.015	0.008	0.000		0.006		0.019**		0.011	0.011
Yr2010	-0.036	0.012	0.017	0.053*		-0.029		0.017*		0.021	0.045**
Yr2011	-0.043	-0.004	0.008	0.051		-0.009		0.004		0.008	0.030*
Yr2012	-0.047	-0.018	-0.009	0.037		-0.014		-0.005		-0.007	0.015
Yr2013	-0.035	-0.022	-0.011	0.024							
Lagged Total Gap					0.295	0.446	0.737**	0.546**	0.482***	0.424***	0.040
Constant	0.258***	0.155***	0.019	-0.239***	0.181**	0.146*	0.047	0.064	0.016	0.005	-0.238***
Observations	209	209	209	209	142	142	142	142	142	142	142
R-squared	0.120	0.144	0.107	0.159							
No of countries	31	31	31	31	31	31	31	31	31	31	31
R-squared-within	0.119	0.144	0.107	0.159							
R-squared- between	0.15	0.036	0.241	0.013							
R-squared- overall	0.1	0.003	0.006	0.039							
F(8,30)	2.99	3.53	2.47	3.26							
F-test (P-value)	0.013	0.005	0.035	0.008							
AB test 1 (z test)					-1.09	-1.35	-2.01	-2.07	-2.47	-2.38	-1.47
AB test 1 (p-value)					0.28	0.18	0.04	0.04	0.01	0.02	0.14
AB test 2 (z-test)					-0.09	-0.20	-0.78	0.53	1.11	1.05	-0.08
AB test 2 (p-value)					0.93	0.84	0.44	0.60	0.27	0.29	0.94
No. instruments					18	23	18	23	18	23	23

Table A11. Impact of Measures Using the Total Gap

	Fixed effects				Arellano Bond						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Unexplained Gap	FE_t_q10	FE_t	FE_t_q90	FE_t_q90-q10	AB_t_q1	AB_t_q1	AB_t	AB_t	AB_t_q9	AB_t_q9	AB_t_q9-q1
freeze	0.041**	0.016*	-0.020	-0.061**	0.023*	0.031***	-0.003	0.010	-0.025**	-0.022*	-0.039***
cut	-0.012	-0.021**	-0.019	-0.007	-0.009	-0.002	-0.034***	-0.032***	-0.018*	-0.020**	-0.015
yr2008	-0.001	0.006	0.007	0.008							
Yr2009	-0.001	0.007	0.011	0.012		0.001		0.002		0.002	0.000
Yr2010	-0.033	0.004	0.016	0.049*		-0.031		0.000		0.008	0.034
Yr2011	-0.036	-0.011	0.002	0.038		-0.023		-0.013*		-0.005	0.015
Yr2012	-0.027	-0.022*	-0.006	0.021		-0.015		-0.022***		-0.008	0.002
Yr2013	-0.027	-0.025	-0.012	0.015		-0.018		-0.022***		-0.012	-0.002
Lagged Unexpl. Gap					0.243	0.364**	0.388	0.269	0.295***	0.298***	0.202
Constant	0.154***	0.081***	-0.018*	-0.172***	0.103**	0.096***	0.052*	0.066***	-0.008	-0.006	-0.129**
Observations	175	175	175	175	125	125	125	125	125	125	125
R-squared	0.068	0.172	0.093	0.092							
No of countries	25	25	25	25	25	25	25	25	25	25	25
R-squared- wihin	0.068	0.172	0.097	0.092							
R-squared- between	0.007	0.000	0.084	0.001							
R-squared- overall	0.016	0.023	0.009	0.010							
F(8,30)	1.220	4.490	2.530	2.030							
F-test (P-value)	0.332	0.020	0.037	0.086							
AB test 1 (z test)					-2.132	-2.939	-1.959	-2.165	-2.385	-2.445	-1.406
AB test 1 (p-value)					0.033	0.003	0.050	0.030	0.017	0.015	0.160
AB test 2 (z-test)					-0.714	-0.386	-0.058	-0.040	0.274	0.283	-0.936
AB test 2 (p-value)					0.475	0.699	0.954	0.691	0.784	0.777	0.349
No. instruments					18	23	18	23	18	23	23

Table A12. Impact of Measures Using the Unexplained Gap and a Balanced Panel

Country	Survey year	Income year	freeze	cut
AT	2008	2007	0	0
AT	2009	2008	0	0
AT	2010	2009	0	0
AT	2011	2010	0	0
AT	2012	2011	0	0
AT	2013	2012	0	0
AT	2014	2013	1	0
BE	2008	2007	0	0
BE	2009	2008	0	0
BE	2010	2009	0	0
BE	2011	2010	0	0
BE	2012	2011	0	0
BE	2013	2012	0	0
BE	2014	2013	0	0
BG	2008	2007	0	0
BG	2009	2008	0	0
BG	2010	2009	1	0
BG	2011	2010	1	0
BG	2012	2011	1	0
BG	2013	2012	1	0
BG	2014	2013	1	0
CH	2008	2007	0	0
CH	2009	2008	0	0
CH	2010	2009	0	0
CH	2011	2010	0	0
CH	2012	2011	0	0
CH	2013	2012	0	0
CH	2014	2013	0	0
CY	2008	2007	0	0
CY	2009	2008	0	0
CY	2010	2009	0	0
CY	2011	2010	0	0
CY	2012	2011	0	0
CY	2013	2012	1	0
CY	2014	2013	1	1
CZ	2008	2007	0	0
CZ	2009	2008	0	0
CZ	2010	2009	0	0
CZ	2011	2010	0	1
CZ	2012	2011	1	1
CZ	2013	2012	1	0
CZ	2014	2013	1	0
DE	2008	2007	0	0

DE	2009	2008	0	0
DE	2010	2009	0	0
DE	2011	2010	0	0
DE	2012	2011	0	0
DE	2013	2012	0	0
DE	2014	2013	0	0
DK	2008	2007	0	0
DK	2009	2008	0	0
DK	2010	2009	0	0
DK	2011	2010	0	0
DK	2012	2011	0	0
DK	2013	2012	0	0
DK	2014	2013	0	0
EE	2008	2007	0	0
EE	2009	2008	0	0
EE	2010	2009	0	1
EE	2011	2010	1	1
EE	2012	2011	1	0
EE	2013	2012	1	0
EE	2014	2013	1	0
EL	2008	2007	0	0
EL	2009	2008	0	0
EL	2010	2009	0	0
EL	2011	2010	1	1
EL	2012	2011	0	1
EL	2013	2012	1	1
EL	2014	2013	0	1
ES	2008	2007	0	0
ES	2009	2008	0	0
ES	2010	2009	0	0
ES	2011	2010	0	1
ES	2012	2011	1	1
ES	2013	2012	1	1
ES	2014	2013	1	0
FI	2008	2007	0	0
FI	2009	2008	0	0
FI	2010	2009	0	0
FI	2011	2010	0	0
FI	2012	2011	0	0
FI	2013	2012	0	0
FI	2014	2013	0	0
FR	2008	2007	0	0
FR	2009	2008	0	0
FR	2010	2009	0	0

FR	2011	2010	0	0
FR	2012	2011	0	0
FR	2013	2012	0	0
FR	2014	2013	0	0
HR	2008	2007	0	0
HR	2009	2008	0	0
HR	2010	2009	1	1
HR	2011	2010	0	1
HR	2012	2011	0	0
HR	2013	2012	1	1
HR	2014	2013	1	1
HU	2008	2007	0	0
HU	2009	2008	0	1
HU	2010	2009	1	1
HU	2011	2010	1	0
HU	2012	2011	0	0
HU	2013	2012	0	0
HU	2014	2013	0	0
IE	2008	2007	0	0
IE	2009	2008	1	0
IE	2010	2009	1	1
IE	2011	2010	1	1
IE	2012	2011	1	0
IE	2013	2012	1	0
IE	2014	2013	1	1
IS	2008	2007	0	0
IS	2009	2008	0	0
IS	2010	2009	0	0
IS	2011	2010	0	0
IS	2012	2011	0	0
IS	2013	2012	0	0
IS	2014	2013	0	0
IT	2008	2007	0	0
IT	2009	2008	0	0
IT	2010	2009	0	0
IT	2011	2010	1	1
IT	2012	2011	1	0
IT	2013	2012	1	0
IT	2014	2013	1	0
LT	2008	2007	0	0
LT	2009	2008	0	0
LT	2010	2009	0	1
LT	2011	2010	1	0
LT	2012	2011	1	1

LT	2013	2012	1	0
LT	2014	2013	1	0
LU	2008	2007	0	0
LU	2009	2008	0	0
LU	2010	2009	0	0
LU	2011	2010	0	0
LU	2012	2011	1	0
LU	2013	2012	0	0
LU	2014	2013	0	0
LV	2008	2007	0	0
LV	2009	2008	0	1
LV	2010	2009	0	1
LV	2011	2010	0	1
LV	2012	2011	0	0
LV	2013	2012	0	0
LV	2014	2013	0	0
MT	2008	2007	0	0
MT	2009	2008	0	0
MT	2010	2009	0	0
MT	2011	2010	0	0
MT	2012	2011	0	0
MT	2013	2012	0	0
MT	2014	2013	0	0
NL	2008	2007	0	0
NL	2009	2008	0	0
NL	2010	2009	0	0
NL	2011	2010	0	0
NL	2012	2011	0	0
NL	2013	2012	0	0
NL	2014	2013	0	0
NO	2008	2007	0	0
NO	2009	2008	0	0
NO	2010	2009	0	0
NO	2011	2010	0	0
NO	2012	2011	0	0
NO	2013	2012	0	0
NO	2014	2013	0	0
PL	2008	2007	0	0
PL	2009	2008	0	0
PL	2010	2009	0	0
PL	2011	2010	0	0
PL	2012	2011	1	0
PL	2013	2012	1	0
PL	2014	2013	1	0

PT	2008	2007	0	0
PT	2009	2008	0	0
PT	2010	2009	0	0
PT	2011	2010	1	0
PT	2012	2011	1	1
PT	2013	2012	1	1
PT	2014	2013	1	1
RO	2008	2007	0	0
RO	2009	2008	0	0
RO	2010	2009	0	0
RO	2011	2010	0	1
RO	2012	2011	0	1
RO	2013	2012	0	0
RO	2014	2013	0	0
SE	2008	2007	0	0
SE	2009	2008	0	0
SE	2010	2009	0	0
SE	2011	2010	0	0
SE	2012	2011	0	0
SE	2013	2012	0	0
SE	2014	2013	0	0
SI	2008	2007	0	0
SI	2009	2008	0	0
SI	2010	2009	1	0
SI	2011	2010	0	0
SI	2012	2011	1	0
SI	2013	2012	0	1
SI	2014	2013	1	1
SK	2008	2007	0	0
SK	2009	2008	0	0
SK	2010	2009	0	0
SK	2011	2010	0	0
SK	2012	2011	1	0
SK	2013	2012	1	0
SK	2014	2013	1	0
UK	2008	2007	0	0
UK	2009	2008	0	0
UK	2010	2009	0	0
UK	2011	2010	1	0
UK	2012	2011	1	0
UK	2013	2012	1	0
UK	2014	2013	1	0

Table A13: Dataset with austerity measures coded

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