THE GENDER GAP IN PENSION IN THE EU

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### Country Abbreviations

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### List of Abbreviations

- **GGP**: Gender Gap in Pension
- **GGP-H**: Intra-household Gender Gap in Pension
- **Eurostat**: European Statistics Bureau
- **EU-SILC**: European Union Statistics on Income and Living Conditions
- **SHARE**: Survey on Health Ageing and Retirement in Europe
EXECUTIVE SUMMARY

I. Motivation: towards a pension gap indicator

Pensions are an important determinant of economic independence of their beneficiaries. For people of working age a concern about this leads naturally to the gender pay gap. Focussing on pensions would be natural sequel to an interest in gender pay gaps. Pensions would reflect the cumulated disadvantages of a career spent in a gender-biased labour market. The further back in time one goes, the more marked this effect would be. However, pension systems are not simply neutral reflections: they may amplify imbalances, by rewarding thrift or they may dampen them, as a social policy choice.

An annual indicator tracking gender imbalance may be justified by the complexity of gender effects affecting pensions. The structure of pensions is influenced by three sets of factors:

First, very long term structural changes: Ageing obviously, but also echo effects of past employment: Today’s pensions may reflect yesterday’s employment, and social norms such as divorce, widowhood, cohabitation between generations. Second, today’s pensions are affected by past pension reforms. Today’s pensioners are frequently covered by transitional arrangements. They will have lived and worked under one system, and will in many cases receive benefits under another. Being a ‘group stuck in the middle’, they may not be protected by the internal operational logic of the system, whether new or old. On the other hand, as time proceeds, more individuals will be affected by new features, and be vulnerable to new kinds of pension risks. The two most salient reform directions to affect gender are: First, the switch in emphasis from first pillar pensions to second pillar pensions. The overall effect tends a closer link between contributions and benefits, what in US has been termed ‘the privatisation of risk’. Second, the emphasis on working longer. Though the rationale of this is unassailable, there may be hidden side effects in the medium term. The third set of factors shaping pensions are short-term pressures, connected with the current economic crisis. These pressures vary from country to country but could lead to important swings in gender effects; these could affect both occupational and State systems.

Thus, older women are recipients of echoes of past disadvantage, just as they begin to receive premonitions of future problems. As the EU has taken a lead on both ageing populations and gender balance, it is appropriate that it should devote attention to possible side effects of the one area of activity impinging on another. A decisive step in that direction would be to produce on a regular basis a gender gap indicator for pensions.

The only realistic data source for such an indicator would be the EU Statistics on Income and Living Conditions (SILC), possibly supplemented by another international data source, SHARE, of individuals
over 50. The option of relying on administrative must be ruled out for three reasons: Information is not comparable, it is fragmentary and sometimes it may be gender insensitive.

The indicator should focus on people over 65, which would keep it in line with demographic practice. To describe the gender situation one needs two indicators: firstly, an indication of coverage – i.e. who is a pensioner; secondly, an indication of the difference in pensions for those who draw a pension. The latter is the key diagnostic used and is termed the ‘Pensioners gender gap in pension’. An alternative concept, the ‘elderly gender gap in pension’ is defined over the population, i.e. includes those with no pensions.

The gender gap in pension is the percentage by which women’s average pension is lower than men’s, and measures by how much women are lagging behind men.

The considerable research effort has concentrated on Gender Gaps on Pay. Though a generalisation to pensions is a natural extension, it has received little attention. Does old age maintain inequalities, does it cumulate them, or does it give a chance to level life chances?

The large international literature concludes that gaps are the result of three facts: Women participate less in the labour market; they work fewer hours and/or years; they receive lower wages. The ‘bad news’ is that a snowball is produced on women’s career earnings. The ‘good news’ is that pay gaps have been shrinking in the past two decades, through progress has slowed down in recent years.

Does this mean that pension gaps will likewise shrink with a lag, and that hence pension gaps are a problem which will correct itself? The US experience is very disappointing. A recent study noted that, whereas earnings gap have shrunk dramatically, pension gaps have been essentially immobile. In Europe this question has not been put; or if it has been put, it has not been answered. There exist a number of national studies, with a focus on specific institutional features or reforms. The overall picture of where Europe is, and where it is going is essentially absent.

II. A statistical characterisation of gender gaps in pension in Europe in 2009

The statistical analysis proceeded in a series of structured series of questions:

**How wide is the pension gap in Europe?** Our central estimate of the Gender Gap in Pension is very wide. The EU-27 average is 39%. The two highest figures are for Luxembourg (47%) and Germany (44%). At the other extreme, Estonia is lowest (4%) followed by Slovakia (8%). A large number of countries are around 30%, while fully 17 out of the 27 have gender gaps in pension greater or equal to 30%.

This is more than twice the figure of the pay gap indicator (equal to 16%). However, there is no simple relationship between the two figures. Suffice it to say that Estonia (lowest pension gap) also has the highest pay gap. In some cases pensions may reduce pre-existing inequality; in others they may also widen it, sometimes as an unwanted side-effect of pension feature.
Who has a pension? Coverage effects and the elderly pension gap. Pension gaps may also be calculated for the total population over 65. In some or possibly most countries this makes little difference, as all elderly people are drawing some kind of pension. However, in some countries more than a third of women have no pension while in others that figure is more than one in ten. Including people with zero pensions has a large effect on computed pension gaps, altering the ranks considerably.

Is the pension gap tending to rise or fall? Cohort analysis. Are pension gaps, like pay gaps, shrinking over time? If we compare pension gaps of those aged 80+ with those aged 65-80 using EU-SILC data, we see that pension gaps are considerably lower for the older group. However, this may be due to the equalising effect of pensions collected by widows. A similar exercise using data from SHARE leads to a mixed picture: in some countries younger people’s pension have higher gaps, while in others the opposite is the case. In consequence, for this issue, the data are essentially agnostic.

Effects of education and lifetime income. Education is closely linked to career income. Given that we know educational attainment of future pensioners will rise, if gender gaps rise with education, that can lead us to expect that gaps will rise in the future. However, the picture emerging from the data is mixed. Though in the EU27 the higher the education, the larger the gender gap, this is not a picture which holds in all member states, partly because gender differences at either extremes of the educational spectrum tend to increase the gap, not so around the middle.

How are pensions distributed? Are (proportional) gender gaps higher where pensions are higher? How are pensions distributed around the average? Women are greatly overrepresented among lower pensions and underrepresented in higher pensions: for every poor man, we have almost two poor women. When calculating separate gaps for each third of the distribution there are some countries where the gap is rising with income and some where it is falling, indicating that this feature operates in different ways in different parts of Europe.

Can we discern trends in the pension gap over time? Comparing points five years apart (2010 and 2005) we again see a mixed picture. Whereas on average there is a widening of gaps (by 1.7pp), this masks opposing trends – from improvements of the order of 4-5pp, to deterioration of 6-4pp.

Pension Gaps and Broken Careers. Women have worked for fewer years than men. In general shorter careers are associated with larger pension gaps, though that relationship is not one-to-one. In some cases gaps rise and then fall. Distinguishing ‘dominant job’ during one’s working life, the lowest gender gaps are met in the public sector (where they might even be negative), and the largest for the self employed.

The effect of multipillar systems. Second pillar systems are well established in a small number of countries. In Denmark, the Netherlands and in Switzerland the second pillar is sufficiently mature to
enable analysis, using data from SHARE. In those countries the composite of the two pillars has a wider gender gap than the public pillar on its own. The second pillars in those countries also display a very significant coverage gap, as fewer women enrol.

**Gender gaps by marital status; Is there a motherhood penalty?** Gender gaps are narrower for single women; even so, though, gender gaps remain large (17%). Gender gaps are widest for married women, while divorced women are somewhere in the middle. Using SHARE data, a very clear and strong relationship is apparent between the number of children raised and the gender gap.

**Are disparities larger if we look inside households? The intra-household pension gap.** Our central gap indicator, the Gender Gap in Pension, is essentially a macro-level or aggregate indicator comparing the average pension for women to that for men. We also looked inside the household and compared each woman with her own partner to construct a micro-level indicator, the intra-household gender gap in pension. We found that disparities in pension income are higher within households than in the aggregate. The intra-household gap in pension is higher than the aggregate gap in the EU as a whole and in the vast majority of its member countries. In particular, the median intra-household gap is 4 percentage points higher than its aggregate equivalent within EU27 (46% against 42%) and 20pp higher in five countries. It is lower in only six countries, four of which are Eastern European countries.

**Putting the picture together: Decomposition analysis and the adjusted gap.** Decomposition methods supplemented the factor-by-factor analysis with a multivariate examination. The key finding is that netting out differences in the observed characteristics between men and women that the SILC source reports – education, age, length of working career, marriage status and weight of pillar 3 pension income - has a moderate impact on the gender gap in pension. In six of the nine countries we investigated for the purpose, the ‘adjusted’ gap (after the netting out) ranges from -15% to +11% of the original gap (UK, the Netherlands, Austria, Greece, Italy and Poland). In Germany and France netting out entails a decrease of around 30% of the original gap, up to about 100% in Estonia where, however, the original gap is very low (around 4 percent). In most countries a sizeable gap remains which cannot be easily explained away with the differences in characteristics between men and women recorded in the data. Understanding and addressing this gap is an important challenge for both research and policy.

**III. Some lessons from countries’ experiences**

The idea was to generate Gender gap information comparable to SILC, using locally available administrative data. National experts were asked to collate and comment local, administrative information on pension and pension gaps for ten countries: Estonia, Poland, Denmark, Austria, the Netherlands, Italy, Greece, the UK, France and Sweden. Though in some cases this required little effort, in the majority of cases it was very difficult; in others it proved impossible; in one case, at least, no
information was produced by gender at all. Thanks to a recent national study focussing on the gender pension gap we could also access local information for an additional country, Germany. The report concluded by viewpoints of the national experts on three themes: prospects for the future; data and gender visibility; and the issue of derived rights. The experts largely concur that more needs to be done to measure and understand what causes gender gaps; and that, even in those cases where the issue is less acute; there are no grounds for complacency.

IV. Policy directions

The fear is that, individuals accustomed to economic independence in their daily affairs might be confronted, once they enter pensionable age, with situations presuming dependence. What had been gained in the labour market may be reversed in pensions.

The worrying fact is that we are only gradually forming an opinion as to whether this fear is unfounded or not. The statistical analysis showed that gender gaps in pension are many times wider than pay gaps. One especially unsettling issue has to do with the lack of visibility of the problem. The report uncovered wide gaps in most countries, but also an overwhelming complexity. The hope that improvements in pay gaps will percolate through to pensions is unfounded.

When a new concern enters policy ‘radar screens’, understanding proceeds in three steps: Awareness; Amelioration; and finally Prevention. In the case of pension gender imbalance we are still in stage one – visibility of the issue. At this stage the EU can play a decisive role: to place the issue on the agenda and to galvanise the type of national initiatives that can proceed with amelioration and possibly prevention.

Thus the key policy lesson is Vigilance.
CHAPTER 1 MOTIVATION: TOWARDS A PENSION GAP INDICATOR

1.1 The big picture: The need for gender vigilance for older people

Simone de Beauvoir, writing in the 1960s in The Coming of Age (1970), was conscious of a pervasive gender dimension in the way society treated old age:

“What we have here is a man’s problem... When there is speculation upon the subject (of old age) it is considered primarily in terms of men. In the first place because it is they who express themselves in laws, books and legends” (de Beauvoir, 1996, p. 89).

At the same time though, things need not necessarily be so. At a later point in the same book, she notes a potential for righting gender imbalances:

“For women, the last age is a liberation... Now at last they can look after themselves...” p. 489

A generation later, policy is called upon to diagnose and correct the problems created by human institutions and social processes in order to realise the potential for independence that de Beauvoir sensed existed.

An obstacle that existed then is still present: Older women’s interests are taken for granted, while in many countries they are insufficiently represented in decision making fora. At the same time, their well-being and independence are the outcome of complex forces: older women and men are affected by long term social changes like population ageing; they are the first group affected by the cumulative impact of twenty years’ of gradual institutional reform in pension systems and elsewhere; in the current economic and fiscal crisis they are frequently one of the groups most immediately affected by fiscal retrenchment. At the same time, today’s older women witnessed in their working lifetimes a major transformations in the role played by women in economy and society, a transformation that took place at different speeds across Europe and is yet to be completed.

Pension systems have changed considerably over the last 20 years, and are changing still. Older women have lived and worked in one system and will collect their pensions when that system will be considerably different. In this way, older women’s pensions carry simultaneously echoes of past disadvantage and premonitions of future vulnerability.

These reasons, taken collectively, imply that it is important to know the extent and location of gender differences in pensions across Europe. Perhaps more significantly, in a field which is complex and is affected by numerous influences, it is important to track changes over time. If this can be attained, problems might be spotted early on and solutions sought and implemented in a timely fashion.
This report suggests that policy would benefit if a **Gender Gap in Pension** indicator (GGP henceforth) were available on a regular basis. It defines such an indicator which can be easily produced across the European Union on an annual basis; it investigates its properties and use it to characterise the dimensions of the problem for different groups of the population and different institutional settings; it points the way to further work.

1.2. **Motivation of the indicator. Why monitor gender differences in pensions?**

Pensions are the single most important component of older people’s income. In contrast to other components, such as return from savings, income from property or rents, which accrue to the whole household and cannot be separately attributed to a particular member of the household, pensions are paid to individuals. They thus are an important determinant of **economic independence** of their beneficiaries – the capacity of an individual to lead an independent life and to take decisions for him/herself. In this way, differences in pension rights between women and men form the foundation of gender differences between the sexes in later life, as regards capacity for individual choice.

The distinction between economic welfare and economic independence is important to make and to understand. Economic welfare, the access to resources and capacity to well-being, depends on a wider set of income sources, which accrue to the *household*. In order to study welfare, all income entering a household is aggregated, and then apportioned between the members of that household. Given that a household, by definition, is a social unit where consumption is shared among its members, total household income is necessarily **assumed** to be distributed equally among its members. In social surveys, which are used to gauge economic well-being, this means that income of men and women living as a couple is *equal by construction*.1 Indicators, such as poverty rates, which rely on household income, in this way constrain the poverty status of men and women living as couples to be identical. Differences in poverty rates by gender thus essentially rely on comparisons between single member households: people who never married, divorced individuals, widows and widowers2. Due to this fact, gender differences in access to resources are almost certainly severely underestimated in any measure which relies on household income. Should our interest lie in the related, but conceptually independent, issue of relative independence between gender, this shortcoming is even more distorting.

For people of working age this train of thought leads naturally on a focus on differences in employment remuneration – most frequently encapsulated by some measure of pay or earnings gap3. In the case of

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1 See, for example, Joint Reports on pensions 2003, 2006.
2 Strictly speaking, they rely on comparisons between households that have an odd number of members.
3 As Goldin (1993) summarises, “when economists speak of the ‘gender gap’ these days, they usually are referring to systematic differences in the outcomes that men and women achieve in the labour market. These differences
women this is essentially an achievement gap, reflecting the fact that women, in many contexts, may be underpaid, undervalued, overworked across the board; their responsibility for unpaid work in the family leads to underrepresentation in the paid labour market. Once people have left the labour market, the analogue of pay or earnings is the source of income that replaces them: i.e. pensions. An indicator of a pension gap would in this way be a natural complement, almost a sequel, to an interest in gender pay gaps. Given that many pensions systems are designed to reflect employment experience, one would expect that pensions would reflect the cumulated disadvantages of a lifetime’s involvement in a gender-biased labour market. The further back in time one goes (and hence the older the pension recipient), the more marked one would expect this effect to be.

However, pensions do not simply reflect labour market experiences in a neutral way. Systems which rely on the accumulation and investment of contributions may actually exacerbate inequalities in the employment remuneration. In contrast, as the largest single item of social protection expenditure, they are in principle called to correct to some degree what are perceived as imbalances (or even injustices) of the labour market. For this reason, the possibilities of intervening to correct gender imbalances are much greater in pensions than in earnings. An intervention requires information. A focus on gender differences in pensions would be an invaluable addition to the policy toolbox.

Those two arguments: to complement pay gender gaps and to orient public pension decisions are sufficient to justify a policy interest in pension differences between men and women. Why should that interest entail following those differences in regular time intervals? In other words, why should the EU consider adding a new pension gap indicator to the set of structural indicators it publishes every year?

An answer to the question of “why an annual indicator?” can be sought in the complexity of influences which combine to produce the pension gender effects that will be appear every year. These influences can interact mutually or with other features and can frequently lead to unforeseen outcomes, possibly even some ‘collateral damage’. The structure of Pensions –and hence gender-based differences- are influenced by three sets of factors:

First, very long term structural changes, operating like tectonic changes to transform the pension environment. Ageing and demography are the most well-known of these differences: Older women are increasing in number; their state of health is changing while in comparison with earlier periods they have fewer children and social ties are looser. The anticipation of future acceleration of ageing may

are seen in the percentages of men and women in the labour force, the types of occupations they choose, and their relative incomes or hourly wages”. Thus one can distinguish distinct notions of participation gap, pay gap and earnings gap.
already have effects on today’s older people, as policy adjusts with a lead.\(^4\) Similar in effect to ageing, there are echo effects of past employment patterns. Today’s pensions may reflect yesterday’s employment picture. The pace of women’s emancipation in the labour market has proceeded at different speeds in different parts of Europe, with the North typically more advanced than the South. The older cohorts may be more influenced by past gender imbalances; younger pensioner may already show the effects of non-traditional modes of working (part-time, contract work etc). Finally, social norms have been altering aspects that affect pensions: the incidence of divorce, the prevalence of widowhood, the probability of cohabitation between generations.

Second, today’s pensions are intimately affected by the extent and spread of institutional change, chiefly pension reform\(^5\). Pension reforms have been an ongoing project in Europe since 1990s in the context of preparing for the long term fiscal challenge of ageing, in some cases transforming the pension picture completely. However, in most cases reforms influence the flow of people entering retirement, and hence take a long time to percolate through all retirees. Insofar as one can generalise, today’s retirees are affected by the general climate of retrenchment. Given that in many countries pension reforms have been under way for almost two decades, they are often covered by transitional arrangements designed to smooth the effects of those reforms and addressed towards those relatively close to retirement\(^6\). This phenomenon is known as ‘grandfathering’.\(^7\) As time proceeds, though, and new systems mature, there will be an increasing number of individuals whose pensions will be marked by the characteristics of the new systems, and who will be vulnerable to new kinds of pension risks, probably linked to the operation of the new system. Indeed, in those countries where reforms took place first (e.g. Holland, UK, and Switzerland), those effects should already be visible.

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\(^5\) On pension reform, see the excellent book Barr and Diamond 2010.

\(^6\) ‘A crucial distinction in pension reforms is between (a) the state when a reform is fully operational – ‘mature’, in the sense that all have participated in the new system both as contributors and as beneficiaries and (b) the transition towards full operation, when changes are gradually introduced and special dispensations are made for people who have contributed most of their lives to the old system. These dispensations may often be more generous than the new situation; they are also frequently ad hoc, in the sense that they do not strictly follow from the logic of either the old or the new system. This feature could imply that ‘grandfathered’ populations may be more at risk, as they are more dependent on the good will of system operators.

\(^7\) One wonders to what extent grandmothers receive this solicitude...
The two most salient directions that are likely to impact on gender issues are: First, the **switch in emphasis from first pillar pensions** (provided by the State and usually based on societal solidarity and pay-as-you-go financing) to **second pillar pensions** (i.e. provided collectively based on *occupational* solidarity, and prefunded. This switch is frequently (though not always) combined with a change in the type of pensions from defined-benefit final salary schemes to defined contribution schemes (Mackenzie 2010, Orenstein, 2009). The overall effect tends to be an increase in individual responsibility in the form of a closer link between contributions and benefits\(^8\) and hence an overall reduction in solidarity of the system. Indeed, in the US this trend has been termed ‘the privatisation of risk’, in the sense that it transfers risk from the employer and worker to the beneficiary. The second reform direction is the emphasis on **working longer**, which is a key message in ‘Europe 2020’. Though the long term rationale of this direction is unassailable, there may be side effects in the medium and short terms that must be guarded against: disincentives for early retirement may lead to lower incomes for those with little choice (e.g. due to inability to work later owing to caring responsibilities). While the focus is (rightly) on the supply of labour (i.e. on incentives to work longer), employer prejudice, discrimination in training may keep *demand for older workers* low.\(^9\)

The **final set of factors shaping pensions** are short-term pressures, usually connected with the current economic crisis. These pressures vary from country to country but could lead to important (and hard to predict) swings in gender effects. For example, greater insecurity in the labour market increases the relative attractiveness of state provided Defined Benefit (DB) pensions; in this way fiscal problems are exacerbated. Second pillar pensions have been hit hard by the collapse of asset values\(^10\). The sovereign debt crisis led to numerous cuts of pension in payment, making a mockery of the notion of ‘Defined Benefits’ and fuelling pensioner insecurity\(^11\). In a cash shortage, first pillar pensions are one of the largest items of expenditure under the direct control of the public sector; pensioners as a group are vulnerable to public finance pressures.

Recapitulating, older women pensioners may be, as a group, ‘stuck in the middle’. They have lived and worked under one system – which frequently implicitly presupposed a ‘Male Breadwinner Model’; they will in many cases receive benefits under another. Where their entitlements are transitional

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\(^8\) There is a tendency for the social component to be separated out or to be means tested.

\(^9\) The conclusion in Munnell and Sass’s 2008 study of the US is that Demand for labour factors on behalf of employers were responsible for the fall in average retirement ages in the 1970s...

\(^10\) An interesting observation was that some thrifty Northern pension funds had been investing in high yield Southern sovereign debt (used to finance, *inter alia*, unsustainable pensions). They were hit hard once those debts, in the Greek case, lost 75% of their value – a case where pension implicit debt was *de facto* mutualised?

\(^11\) Inadequate indexation erodes the real value of pensions outside the euro area. Greece post-memorandum is a case in point, where pensions in payment were cut 7 times in two years (Tinios, 2012).
‘grandfathered’), they depend on government assurances given at the time of the original reform, (the urgency of which many years later may be forgotten). They are, thus, not protected by the internal operational logic of the system, whether new or old. Women may be more at risk than men: Their rights on social insurance are often ‘derived rights’ (survivors’ pensions, married people’s supplements); in those systems where a 2nd pillar is taking hold, women are more likely to rely on state systems, or to be more affected by gaps in contributions and broken careers; finally, in many countries they persist in the role of carers (for children or aged parents) even as unpaid work is receiving less recognition.

Women in particular may be vulnerable due to four factors:

1. Echoes of past problems – women may have fewer pension contributions. This may be due to broken careers, low pay, segregation, past discrimination, working informally.

2. Premonitions of future problems. Tighter linking to contributions, though desirable in itself, may exacerbate current disadvantages faced by women. Types of work such as part time may lead to lower rights in future; multi-pillar systems could compound disadvantages by introducing effects magnifying inequalities,

3. Problems where institutional change may lag behind social change. e.g. social insurance treatment of divorce, widowhood.

4. Women may in practice be more vulnerable to crisis-induced changes. If women are worse off to begin with, they may be more vulnerable to a sudden deterioration. Despite protestations to the contrary, ‘male breadwinners’ or ‘heads of households’ may implicitly be given priority in crisis responses.

Given that the EU, rightly, has taken a lead to guide responses to ageing populations and to gender balance, it is appropriate that it should devote attention to possible side effects of one area of activity impinging on another. A decisive step in that direction would be to produce and analyse on a regular basis a gender gap indicator for pensions.

1.3. EU context: The sustainability-adequacy policy conundrum

There has been concern that demographic changes necessitate major readjustments to pension systems for at least 30 years (e.g. OECD 1981, 1988). The emphasis up to the 1990s was on the need to safeguard sustainability of the pension systems. When the EU became formally involved (as a result of the Gothenburg and Stockholm summits in 2001)12, it brought into the limelight the idea of adequacy, which can be understood as the extent to which pension systems fulfil their social policy functions. The two

12 Commission of the European Communities, 2001 Commission Communication Supporting national strategies for safe and sustainable pensions through an integrated approach, (COM 2001) 362
concepts should be complementary and inseparable, in the sense that they form a trade-off: sustainability can always be satisfied by sacrificing adequacy and vice versa. The task for policy is to seek changes that do as well as possible in both dimensions.

Adequacy in the field of pensions means two different things: First, avoidance of low income and poverty at old age, which it shares with social inclusion policy. Second, ensuring smoothing of income at different stages in the life cycle; retirement from employment should not lead to sharp falls in financial well-being. Those two objectives are, to some extent antithetical. Indeed, ‘Beveridge–type’ social protection systems (based on citizenship rights) traditionally have given emphasis towards the first objective. ‘Bismarck-type’ continental systems organised around social insurance use income smoothing as their starting point. However, though the two systems’ origins may differ, they evolved in converging directions, with the result that it is now possible to talk of a ‘European Social Model’. This model has common objectives which can, perhaps, be pursued by different instruments. Indeed this recognition is the essence of the Open Method of Coordination, applied in the field of pensions since 2001.

The dimension of gender enters through this twofold framework. Nevertheless, the fact that the discussion was always placed squarely within the area of social policy, implied that features such as greater longevity for women were not allowed into the discussion. As a result, European discussion of equity issues in pensions sidesteps the fact that women live longer; thus unisex actuarial factors are used in all new systems.

It was clear all along that much of the sustainability adjustment had a gender dimension: women’s retirement ages and labour force participation were envisaged as adjusting the most. At the same time, pension reforms frequently did away with some gender-specific aspects of pension systems which were originally justified as compensating women for non-pension obstacles. Similarly, features of new systems could interact with existing gender disadvantages to produce new kinds of inequities, even as provisions that perpetuated disadvantage were gradually done away with. Finally, many of the

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13 On types of pension systems see Barr and Diamond (2010). Esping Andersen (1994) is the most influential categorisation of social protection systems.


15 Such a viewpoint would come naturally if pensions were seen in the context of saving as a kind of asset accumulation. The social policy view could also be justified on more philosophical grounds in terms of certain differentiations in treatment (e.g. based on a statistical observation of longevity) being inadmissible a priori.

16 Such are provisions encouraging exit of women from the labour market with few years of contributions, hence leading to permanently low pensions.
principles running through reforms could, as side effects, lead to lower entitlements for women: Closer linking of contributions to entitlements cannot avoid penalising periods out of the labour force, unless some mitigation is designed. These looming threats can be well illustrated by work profiling hypothetical career structures and computing (‘synthetic’) replacement rates for people who fit those profiles; the Indicators Subgroup of the SPC has produced such results\(^{17}\), as has the OECD. The work of the ISG is a clear warning sign, that, should behaviour remain unchanged, many new equity issues affecting gender could appear in future years.

The EU in Europe 2020\(^{18}\) is giving a clear signal that pension reforms and working longer will have pride of place in the overall attempt towards ‘smart, sustainable and inclusive growth’. In this context, though, policy formation is facing a conundrum, which is especially sharp in the field of gender.

This conundrum facing EU policy is illustrated by two key documents both published in 2012. The 2012 Ageing Report\(^{19}\) notes that the reforms of the last few years have resulted in the outlook for sustainability being much improved in comparison with the 2009 Report. The 2012 Adequacy Report\(^{20}\) is more circumspect, noting that “analysis of the change in replacement rates ... demonstrates that greater sustainability ... has been achieved through reductions in future adequacy” (p9)\(^{21}\). The same report goes on to say that “an important part of the adequacy challenge is gender specific”. In other words, pension reforms could, if people’s behaviour does not change, pose threats to gender equity amongst the older population. Avoiding this is a key challenge for the EU.

Much of the Adequacy Report discusses this challenge. It examines statistical indications of today’s situation and assesses the knowledge gaps to be filled by future work. Indeed, it may be said that the Adequacy Report, through a different route and from a different starting point, has arrived at the same conclusion that this report has reached: defining a gender pension gap indicator must be the next steps of the EU.

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\(^{17}\) Indicators Subgroup of the SPC 2009, *Updates of current and prospective theoretical pension replacement rates*, 2006-2046


\(^{20}\) Report on Pension Adequacy in the EU 2010-2050:

http://ec.europa.eu/social/BlobServlet?docId=7805&langid=en

\(^{21}\) The Ageing Report makes clear that the largest contribution to expenditure restraint comes through falls of the ‘benefit ratio’, i.e. the size of the average pension relative to the average wage. If the pension bill is contained by more people working longer, the fall in the benefit ratio may not necessarily lead to lower average pensions.
1.4. A Gender Gap in Pension indicator: statistical description, data and definitions

An indicator tracking gender imbalances in the field of pension should:

- Be easily understood.
- Be available on an annual basis.
- Be available and comparable across member states.
- Should complement existing structural indicators used by the EU, particularly those on the risk of poverty but also gender earnings gaps.

Given the above, the only realistic source for data is the EU Statistics on Income and Living Conditions - EU SILC\(^2\). This is a questionnaire-based survey, which draws a random sample covering the entire population and is conducted annually on all 27 EU member states. Considerable effort is expended to standardise answer categories to make them internationally comparable. The last available data is based on the survey conducted in 2010; given that the questions refer to the past year, the situation reflected in the data is that pertaining in 2009. The same survey is used to construct other EU structural indicators, most notably those connected with social inclusion and the risk of poverty; its properties, advantages and drawbacks alike, are well understood.

EU-SILC asks households detailed questions about their income sources of all their members, whether from employment, from property or social transfers.\(^2\) Social transfers are defined in such a way as to include under the same heading both 1\(^{st}\) pillar (state pensions) and 2\(^{nd}\) pillar (occupational pensions). The two pillars cannot be distinguished (reflecting a judgment that at least in some systems the demarcation between the two may rely on fine distinctions), a matter of some importance in the current investigation. In contrast individually negotiated pension packages (the 3\(^{rd}\) pillar) are separately indicated. Another feature of EU-SILC that is problematic is that (in most countries) survivors’ pensions paid to individuals older than 65 are classified as ‘old age protection’ and not separately identified.\(^2\)

These two issues, the inability to distinguish survivors’ pensions and second pillars pensions, may be thought as ‘blind spots’ of EU-SILC in the context of pension gender gap analysis.

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\(^2\) Atkinson et al (2002) was the report that led to the adoption of structural indicators by the EU. They deal extensively with the characteristics of a good indicator.

\(^2\) Appendix 1 provides more information on EU-SILC and the definition of variables contained.

\(^2\) Social benefits are defined as transfer payments that meet one of two criteria: Coverage is compulsory and / or it is based on the principle of social solidarity (i.e. eligibility is collectively decided and is not decided, as in life insurance, on individual risks).

\(^2\) In the latter case the separate SILC variable on survivors’ pensions (PY110G) refers to payments to individuals under 65 years of age.
EU-SILC is a survey of the population irrespective of age; moreover, it probes especially in the areas linked to economic and financial well-being – i.e. ‘income and living conditions’. For an older population there exist other questions and areas of enquiry, health care, social relations, which acquire greater importance. In order to delve in greater detail in particular issues or to investigate issues related to the EU-SILC ‘blind spots’ it is possible to draw data from another survey of European countries. This is the Survey of Health, Ageing and Retirement in Europe (SHARE), an interdisciplinary survey covering economic well-being, health, (physical, mental and health care) and social relations.\(^{26}\) Though it is of the nature of sample surveys that they cannot be absolutely comparable, being able to draw on an alternative survey can be thought of as a check on key findings in EU-SILC. Equally, the existence of more detailed information on items such as employment histories can shed light on causal mechanisms that may be obscured in EU-SILC. There have been to date two waves of SHARE (2004 and 2007), while the third wave (SHARELIFE) was devoted to extracting retrospective information for respondents’ entire life from childhood. SHARE will be used thus to supplement the picture derived from EU-SILC.

A matter of some importance is the decision of whom to include in the definition of ‘pensioner’. This has two aspects:

**First**, individuals themselves decide when to leave work and to enter retirement. They decide whether to apply for a pension as a conscious decision, depending on a number of features both of their personal circumstances, the parameters and regulations of the pensions system in place (e.g. minimum retirement ages) and ultimately whether they prefer to be pensioners rather than to carry on working.\(^{27}\) The transition from work to retirement is a very complex process; the kind of issues which enter into it are largely distinct from the issues that motivated our search for a pension gap indicator. In order to abstract from these complications and to produce an indicator that retains the feature of simplicity and ease of understanding, we investigate a homogeneous group of people defined in such a way that the transition from work to retirement is complete and for whom pensions have settled into the relationship with other income that will characterise the rest of their retirement. To achieve this, the simplest course is to focus on the group of people over 65. In all member states, the transition to

\(^{26}\) The Survey of Health, Ageing and Retirement in Europe (SHARE) is a multidisciplinary and cross-national panel database of micro data on health, socio-economic status and family networks. The first wave (2004/5) of SHARE covers more than 30,000 individuals aged over 50 in 12 European countries, while in the second wave (2006/7) further data have been collected in Czech Republic, Poland as well as Ireland. SHARELIFE is the third wave of data collection for SHARE, which focuses on people’s life histories. Almost 30,000 men and women across 13 European countries took part in this round of the survey.

\(^{27}\) All these considerations mean that one cannot take as random who is a pensioner and who is working. In technical terms the sample is endogenous and any simple observations derived from it can be seriously misleading. Correcting for this endogeneity is technically possible, but would greatly complicate the interpretation of the indicator, whilst also making it contingent on the model used to correct for endogeneity.
retirement is all but complete;\textsuperscript{28} in consequence the relationship between pensions and other incomes, as well as, most crucially, gender differences in pensions have settled into their long-term values. During the course of the analysis age will be subdivided further (into ‘the younger old’ 65-80, and ‘the oldest old’ 80+). Indicative results will also be presented for the younger retirees (50-65). The use of 65 as a cut-off age also serves to underline the concern for the elderly; that age is the conventional statistical start for ‘old age’ and will thus allow the indicator to be harmonized with a large number of other works in the area.

The second important issue is also related to the definition of who is a pensioner. The definition used here is ‘any person who appears to be drawing a pension as his/her own income’, i.e. individuals with non-zero values of pensions\textsuperscript{29}. This excludes from the definition individuals who are not themselves beneficiaries of pensions, and whose pension income is zero.\textsuperscript{30} Thus a pension system would be defined by two indicators: One measuring gender pension differences for those with a pension, and another indicator depending on system coverage – i.e. the gender differences for those people over 65 who have no pension. It should be noted that the exact parallel exists in the case of people of working age: gender analysts are used to talking separately of a participation gap (i.e. how many more women rather than men are working for pay) and an earnings (or pay) gap; the latter looks at earnings of those who are working and compares women and men.

The pension gender gap is computed in the simplest possible way: it is one minus women’s average pension income divided by men’s average pension income. To express it as a percentage this ratio is multiplied by 100. It is the percentage by which women’s average pension is lower than men’s, or by how much women are lagging behind men.

Thus in parallel with earnings gaps we define two linked indicators:

1. **The coverage gap** – i.e. the extent to which more women than men do not have access to the pension system (in the sense of having zero pension income)

2. **The pensioners’ pension gap** – or else ‘the’ pension gap, i.e. the difference in pensions excluding zero pensions. This measures how the pension system treats ‘its beneficiaries’, i.e. excludes

\textsuperscript{28} Even if the latter is not 100%, the ‘missing percent’ is very small and is unlikely to pose a major problem in calculations.

\textsuperscript{29} In France women who draw only a survivor’s pension as a derived right are excluded from the definition of ‘pensioner’ used in official statistics.

\textsuperscript{30} This definition may include people whose main source of income is not pensions (e.g. income from property), as well as others who may still be working and simultaneously drawing a pension – though the latter group is small for the over-65s.
those that have no active links with pensions. It is thus what administrative data, by construction, would invariably cover. This definition would thus match statistics produced by pension providers, or any other kind of administrative data (e.g. compilations of pension fund data).

<table>
<thead>
<tr>
<th>DEFINITION OF THE GENDER GAP IN PENSION</th>
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<tbody>
<tr>
<td>We define the Gender Gap in Pension as:</td>
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<tr>
<td>$$\left(1 - \frac{\text{women’s average pension income}}{\text{men’s average pension income}}\right) \times 100 \quad (1)$$</td>
</tr>
<tr>
<td>In order to define both women’s and men’s average pension income we take into account the following assumptions:</td>
</tr>
<tr>
<td>1) We consider the subsamples of individuals in the EU-SILC UDB p-file who are 65 years old at the beginning of the income reference period (t-1) of the EU-SILC wave concerned (t).</td>
</tr>
<tr>
<td>2) Among the subsample of individuals in 1), we select those who have AT LEAST one positive income value of old age benefits (PY100G), regular private pensions (PY080G) or survivors’ benefits (PY110G).</td>
</tr>
<tr>
<td>By denoting “F” the women in subsample 2), and ”M” the men in subsample 2) formula (1) can be re-written as follows:</td>
</tr>
<tr>
<td>$$\left(1 - \frac{\sum_{i=1}^{k} (PY \ 080 \ G_{ij} + PY \ 100 \ G_{ij} + PY \ 110 G_{ij}) w_{ij}}{\sum_{j=1}^{m} w_{ij}} \right) \times 100 \quad (1 \ b)$$</td>
</tr>
<tr>
<td>Where ( w_{ij} ) is the personal cross-sectional weight of female ( i ) (SILC variable PB040), and ( w_{ij} ) is the corresponding weight for male ( j ).</td>
</tr>
</tbody>
</table>

If we include in the pension average calculation individuals with zero income, we arrive at an indicator which combines the two above – which can be called the ‘elderly pension gap’, in the sense that it includes in one indicator all people over 65.

Thus the analysis will use the pensioners’ pension gap and the coverage gap as its ‘headline indicators’; it will nonetheless investigate how these two indicators combine in the elderly gap.

1.5 The question of administrative data
In the gender gap in pension analysis at the European level a key consideration is that of comparability – i.e. the numbers produced have to mean the same thing for all member states. This, in a survey coordinated on a European level, such as EU-SILC, is ensured by asking a common set of questions and

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31 We must recall that, due to using SILC data, ‘pensions’ in this case includes survivors’ pensions of individuals who were not themselves active contributors to the pension system.
ensuring the definitions and concepts can encompass the heterogeneity that is unavoidable in collecting data from 27 different jurisdictions.

Yet it is inescapable that in each member state taken separately, the natural place to look for pension gender differences is from those organisations that disburse those pensions - that is to use administrative data. For someone accustomed to the picture emerging from administrative data, the EU-SILC data may well be unfamiliar. It is thus important at the outset to understand why and in what directions administrative data may differ from survey information:

- Administrative data would of necessity cover only those receiving a pension – i.e. what we call the pensioners’ pension gender gap, rather than the elderly gender gap.

- National pension systems are frequently fragmented – there may be a multitude of pension providers and data may exist separately by occupational category. In multi-pillar systems, statistics for the pension total (equivalent to SILC which aggregates first and second pillar pensions) may be hard to get. The typical case is that statistics for the first pillar is far easier to obtain than that from the second; the latter is very hard to aggregate to derive a national picture. Sometimes data for parts of the system (e.g. civil servants) is only available separately and is not aggregated.

- Administrative data is frequently produced separately by types of pension: old age, disability, survivors may produce separate statistics. Pension providers naturally count pension cheques and not people. In the (not fanciful) case of someone entitled to two pensions, it is fully possible that that person will be counted twice; indeed it is not unknown in pension statistics for the pensioner population to exceed the demographic population. This is sometimes corrected by conducting a periodic (in France every 4 years, also in Germany) survey of activities of pension providers.

- Administrative data would normally be available for all pensioners, including those under 65 which are excluded in our definition.

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32 In multi-pillar systems, each pillar would produce statistics taken its coverage as given. What we will have is a series of ‘pensioner’s gap’ for each system taken on its own; it would be impossible to reproduce the national coverage statistics for each pillar separately. It would be especially hard to aggregate coverage statistics in fragmented systems (especially multi pillar ones) if the statistics are not produced by some central body. This is an important point to do with the governance of a multi-pillar system: system adequacy can only be judged if some statistics are produced centrally.

33 Some national systems do not produce statistics by gender, hence obscuring the question totally.
In order to highlight and illustrate the crucial distinction between administrative and survey data, this report will return to the issue once the European picture derived from EU-SILC survey data is complete. This will be contrasted to a mosaic of available administrative data from eleven European countries.

1.6 What do we know? Literature review

A. Gender gaps as a difference in life chances

The gender gap is one of the better-known aspects of empirical gender analysis. According to dictionary.com, gender gap (noun) is ‘the difference between women and men, especially as reflected in social, political, intellectual, cultural, or economic attainments or attitudes’. The gender gap is essentially an achievement gap. It focuses on inequalities in outcomes between men and women and usually places emphasis on wage rates, earnings or other economic magnitudes.\textsuperscript{34}

In more general terms gender gaps could be taken to mean systematic differences in access to resource or in life chances between men and women. In this way the concept could be generalized in order to be applied to an older population, whose attachment to the labour market lies in the past but still may be a dominant influence on their economic well-being. Though this is a natural extension, it has received far less attention, both theoretical and empirical, than gender gaps more directly linked to the labour market. Does old age maintain inequalities, does it cumulate them and make them worse, or does it give a chance to redistribute and level life chances? (O’Rand and Henrietta, 1999).

B. From the labour market to cumulative gender gaps

As Goldin (1993) says, ‘when economists speak of the ‘gender gap’ these days, they usually are referring to systematic differences in the outcomes that men and women achieve in the labour market. These differences are seen in the percentages of men and women in the labour force, the types of occupations they choose, and their relative incomes or hourly wages’. The gender gap in labour force participation has been eroding steadily over the past century, albeit with different pace in different countries and periods. The gender gap that attracts the most attention, however, is in earnings: here, again, progress has been recorded in leaps (no steady trend).\textsuperscript{35}

\textsuperscript{34} The persistence of an achievement gap is somewhat paradoxical, in economic theory terms: a preferential demand for lower paid women should drive their wages up until they reach the level of men’s. Chichilinsky (2008) explains this seeming paradox by bringing in the economics of the family and the necessity for women to engage in housework.

As for the reasons accounting for the difference in earnings between men and women, economists tend to come up with observable and non-observable factors: education and shorter work experience belong to the first category, while discrimination\(^{36}\) to the latter (e.g. Blau and Kahn, 2000; Smith and Ward, 1989)\(^{37}\). Finally, the unbalanced gender distribution in occupations (often called occupational segregation\(^{38}\)) supplies a further explanation for women’s lower earnings, in the sense that they tend to populate lower paid jobs (Bettio, 2008).

Evidence based on historical cross-section data provides a snapshot of different economic outcomes in the labour market at a specific point in time, as well as over time. In a more dynamic analysis focusing on the life-pattern of the same individuals, the consecutive instances of different outcomes add up to an effect of cumulative disadvantage of women. Such a dynamic approach can follow one of the two following paths: either to utilize panel data comprising the same individuals over time, or to assess the performance of different cohorts in the same phase in their life (say, reproductive ages 25 to 45 years). The latter approach has been used in order to evaluate the ‘maternity burden’ on wages throughout the life-course (Crittenden, 2001, for the USA; and Davies & Joshi, 1999; Davies, Joshi and Peronaci, 2000, for the UK).

It is thus a well-documented fact that women get lower wages and tend to accumulate less income from (paid) work in the course of their working lives. There is a consensus that women’s role as the main carers at home largely explains their lower earning record. This is the result of three main facts, present in all national contexts, but to varying degrees:

First, women with family obligations participate less in the labour market. Second, even when they participate, they tend to work for fewer hours and/or years. And third, they receive lower wages.

The combination of these three stylised facts produces a snowball effect on women’s earnings and careers. Although it appears that the cumulative disadvantage over the life-course has been eased in the late 1990s for women with high education characteristics, there is no recorded improvement for women with lower educational attainment (Davies and Joshi, 1999; Davies, Joshi and Peronaci, 2000).

International comparisons reveal substantial differences in the cumulative earnings gap in Europe: Germany and the UK show similar intensity in the gap, while France and Sweden display lower cumulative earnings gap (Davies and Joshi, 1994). In a more recent attempt to capture international

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\(^{36}\) Discrimination refers to persistent wage disparities between clearly identifiable labour segments with equal productivity potential (Cain 1986 cited in Bettio, 2008: 171).

\(^{37}\) There is an interesting debate on whether the narrowing of the gender gap remained stalled since the late 1990s (see Goldin, 2006) and more recently Bettio (2008) and ITUC (2012).

\(^{38}\) This is the horizontal segregation. From the point of view of lower wages producing the gender wage gap, more important perhaps is the hierarchical or vertical segregation.
variations, Sigle-Rushton and Waldfogel, 2007 utilised data from the Luxembourg Incomes Study in order to compare the cumulative earnings gap in eight countries.

C. From the labour market to the gender gap in pension

In a special issue on gender and ageing Folbre, et al. (2005) note ‘Although women are a majority among the elderly, little is heard about gender differences in economic resources’ (p. 3). Fifteen years earlier, Hurd 1990 noted ‘The great majority of research on retirement has been the retirement of single men and husbands’.

Even and Macpherson 2004, surveying how the US gender gap in pension evolved over the last 30 years, note what is the key question still to be answered. During that time there were dramatic improvements in gender balance in the labour market. Yet the gender gap in median incomes of the older population ‘has been stagnant over the past fifty years. The female-male ratio of median incomes in the population aged 65 and over was 0.61 in 1950 and fell only slightly to 0.59 in 1994’ (p. 182). They explain this stagnation through countervailing institutional change in pension policy (extending the critical period for pension calculation), as well as selection effects,39 chiefly to do with second pillar pensions.

Tracking the gender gap in pension outside the United States has not been attempted in a systematic manner in a cross-section of countries, in the way that has happened to pay and earnings gaps (as in, say, Olivetti and Petrongolo 2008). There have been a number of studies of individual countries, usually focusing on specific aspects of the pension system.40 This literature, surveyed recently by Jefferson 2009, can generate a number of hypotheses that can be used to explain observed differences in gender balance in pensions: (a) gaps in coverage in systems linking entitlements to contribution: coverage gaps in public systems are closing as new gaps are opening up in occupational systems (p120), thus highlighting the importance of following the total entitlement for all pillars, (b) benefit calculation policies – (the role of derived benefits such as survivors’ pension, the period of earnings taken into account, the existence of pension minima, unisex annuity tables for the second pillar),41 (c) methods of financing and part-shifting to funding, affecting the distribution of risk.

Most of the literature on gender and pensions is oriented towards the effects of reforms, usually focusing on a specific reform or systemic feature. In this way the effects of combination of factors, or

39 Though the number of women covered increased, those covered for pension had fewer contributions, probably due to lower labour market attachment. This feature allows them to be more optimistic about the future.

40 For instance, Frericks et al 2006 compare Denmark with the Netherlands, Balchin and Finch 2006 look at the UK, Zajicek et al., 2007 Poland; Steinhaler 1996, Bonnet et al 2006.

41 Given women’ greater longevity, using a unisex actuarial table to convert a lump sum to an annuity, as is done in prefunded pensions, may be interpreted as advantageous to women. However, the same issue can be approached as an issue of gender balance in the labour market – as the US Supreme Court examined it – in which case unisex tables are a logical conclusion. In all EU 2nd pillar systems to date unisex tables have been applied.
indeed of the overall logic of systems may be missed. This piecemeal approach begs the question of **benchmarking the starting point**: what is the current level of gender imbalance, how does it differ between countries and why?

In this respect the US was privileged in having access to good quality survey data which allowed researchers to pose relevant questions and to ponder on causes of observed phenomena. Chief amongst these was the Health Retirement Study (HRS), a panel survey of people 50+ which has been in operation since 1992\(^42\), and has provided material for a large number of studies. The Survey of Health, Ageing and Retirement in Europe (SHARE) was consciously modeled on the HRS. SHARE-based studies have begun appearing, in some cases attempting to explain income gaps in older age\(^43\). Many of the papers in Börsch-Supan et al., 2011 approach the issue of broken careers (Lyberaki et al., 2011; Tinios et al., 2011). However, when one looks at European-level data one has to get along with studies relying on local administrative data or impressionistic analyses of selective cases (see for example Frericks et al 2009).

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\(^{42}\) See [www.hrs.org](http://www.hrs.org)

\(^{43}\) Lyberaki et al. 2012 try to explain gaps in ‘personal income’ – an amalgam of labour and pension income; for people over 65 this is equivalent to a pension gap.
CHAPTER 2: A STATISTICAL CHARACTERISATION OF GENDER GAP IN PENSION IN EUROPE IN 2009 IN ELEVEN STEPS

In approaching a relatively little known and under-researched field such as gender differences in pension entitlements in Europe, it is important to proceed by simple steps each oriented to shed light on a particular issue. In this way and by cross-checking our information and the robustness of our assumptions to the extent possible, we aim to derive a small number of ‘stylised facts’ about the characteristics and distribution of gender gaps in Europe. These stylised facts should form the backbone of a policy approach oriented to getting to grips with this phenomenon.

Our analysis thus proceeds in a series of eleven structured steps, each addressed to a particular issue. Each step may also be thought as an ‘exercise’, designed to illustrate a particular issue or hypothesis. In this way, a step may approach an issue in more than one way or may supplement EU-SILC information with SHARE.

2.1 STEP 1: The headline indicator – How wide is the gross pension gap in Europe?

It is important to have an idea of ‘the’ Gender Gap in Pension (GGP) in Europe – what may be thought as the ‘headline indicator’ or our ‘best estimate’ for gender differences in pensions. This, for the record, consists of the difference in average pensions between men and women over 65, calculated in terms of pensions gross of tax (i.e. before tax is reduced). The results appear in Figure 1.1.

Figure 1.1: Gender Gap in Pension (%), pensioners aged over 65 years

Source: EU-SILC 2010
Note: Estimates for CY and IE are based on 2009 data.

44 The consequences of adopting alternative definitions are explored in other exercises.
Taking the EU as a whole (weighted by population), men on average are entitled to pensions which are greater than those of women by 39%. The widest difference is observed in Luxembourg (47%), followed by Germany (44%), UK (43%), which are clearly above the average. The Netherlands (40%), Cyprus (39%) and France (39%) are around the average. A large group of countries have values exceeding a third (Greece, Ireland, Austria, Spain, Portugal, Bulgaria), while five other countries are around 30% (Sweden, Romania, Italy Norway, and Slovenia). It is thus true to say that in 17 of the 27 Member States women receive pension on average 30% or more lower than men’s. The EU average, being calculated on a population-weighted basis is heavily affected by the gap of the larger countries – Germany, the UK and France most notably.

Finland (25%), Poland (23%) and 19% (Denmark) do better, but still show sizeable differences in gender gap in pensions. The lowest values are found for Eastern European countries: Lithuania (15%), Hungary (15%), Czech Republic (13%), Latvia (9%) and Slovakia (8%). Estonia is ‘top of the class’ – as women’s pensions are lower by only 4%.

Figure 1.2 shows the same picture normalized so that each country’s gender gap in pension is shown relatively to the EU average. The range between the lowest Estonia (11) and the highest (Luxembourg) is by a factor more than 10. Though the breaks (especially at the top end) are not sharp, the existence of four groups of countries is confirmed, with the most common range among countries being some 20 percentage points (pp henceforth) below the EU average.

Figure 1.2: Indexed Gender Gap in Pension (EU-27=100), pensioners aged 65+

The Gender Gap in Pension, as here defined, essentially compares each person to the society’s average. If rich men’s wives have not worked or have few years of contributions, the distance between the two

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45 The intra-household gap is an interesting issue that has not (yet) been addressed.
pensions will be such as to magnify the gender gap (i.e. the gender gap will be affected by extreme values). To see how far this has affected the data, Figure 1.3 presents an alternative definition of pension gaps, based not on average pensions, but on the pension of the middle individual (i.e. the median), a measure that is not affected by outliers, whether high or low.\(^{46}\) In order to facilitate comparisons with the headline (average), the sequence of countries is preserved for all subsequent analysis—i.e. all presentation are sorted by order of the headline gap: Our headline estimation of Figure 1.1 appears sufficiently robust.

**Figure 1.3:** Gender Gap in Median Pension: pensioners aged 65+

The classification of countries into four groups is largely preserved: In 15 countries the gender gap in pension based on mean pension income does not deviate by more than 3 percentage points from Figure 1.1. For example in Germany it only deviates by one point, in Italy by 2, in the Netherlands by 3. Nevertheless, there are some notable divergences: In Sweden, France, Ireland, Portugal, UK, Belgium, Cyprus, Iceland and Denmark the estimation of the gender gap in pension based on median pension income is more than 5pp lower, ranging from 5.5pp in France to over 14pp in Denmark.\(^{47}\)

Women’s pensions are lower than men’s pensions. At the same time, pensions across Europe may be higher or lower *in absolute terms*, but also relative to productive capacity of a country depending on how rich or poor a country as a whole is, or how its social protection system is structured. Though these matters are not part of the remit of this study, it is important to have an idea of what absolute magnitudes lie behind our relative figures. Table 1.1 sets out the values (in Euros) of average monthly pensions by gender. It also notes what percentage this is of GDP per capita and of the at-risk-of-poverty

\(^{46}\) This is, however, is achieved at the cost of further distancing the indicator from published administrative data.

\(^{47}\) A large divergence of mean and median is a sign of lack of symmetry in the distribution of individual values. Such would be caused by a concentration of large (or small pension)
threshold for a household with one member for each country. The variation (as expected) is enormous, with the lowest pension for women being in BG (113 EUR/month) and the highest in LU (2000 EUR); the latter interestingly corresponds to one of the lowest shares of pensions as % of per capita GDP. Only in Bulgaria and Cyprus are mean women’s pensions insufficient to take a single person out of poverty.

Table 1.1: Mean Value of Annual Pension Income of Men and Women aged 65+

<table>
<thead>
<tr>
<th>Country</th>
<th>Men (EUR)</th>
<th>Women (EUR)</th>
<th>Men % of 2009 GDP per capita</th>
<th>Women % of 2010 GDP per capita</th>
<th>Men % of National Poverty line</th>
<th>Women % of National Poverty line</th>
</tr>
</thead>
<tbody>
<tr>
<td>LU</td>
<td>3751</td>
<td>2004</td>
<td>60</td>
<td>32</td>
<td>232</td>
<td>124</td>
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<td>DE</td>
<td>1804</td>
<td>1016</td>
<td>75</td>
<td>42</td>
<td>192</td>
<td>108</td>
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<tr>
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<td>1501</td>
<td>858</td>
<td>71</td>
<td>40</td>
<td>175</td>
<td>100</td>
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<td>1323</td>
<td>77</td>
<td>46</td>
<td>219</td>
<td>130</td>
</tr>
<tr>
<td>CY</td>
<td>1134</td>
<td>692</td>
<td>66</td>
<td>40</td>
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<td>EU-27</td>
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<td>886</td>
<td>74</td>
<td>45</td>
<td>196</td>
<td>120</td>
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<td>1960</td>
<td>1205</td>
<td>81</td>
<td>50</td>
<td>195</td>
<td>120</td>
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<td>GR</td>
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<td>667</td>
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<td>39</td>
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<tr>
<td>IE</td>
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<td>41</td>
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<tr>
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<td>311</td>
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<tr>
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<td>50</td>
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<td>114</td>
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<tr>
<td>DK</td>
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<td>1681</td>
<td>61</td>
<td>50</td>
<td>161</td>
<td>131</td>
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<tr>
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<tr>
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<td>308</td>
<td>38</td>
<td>36</td>
<td>113</td>
<td>108</td>
</tr>
</tbody>
</table>

1 Monthly value = Annual mean total gross pensions divided by 12
2 GDP at market prices, source Eurostat
3 At risk of poverty level for 1-member household, from EU-SILC 2010
To begin answering the key question of interest ‘how wide is the pension gap in Europe?’, one needs a point of comparison. In the case of pensions, the obvious yardstick is the pay gap - i.e. differences between men and women in paid labour. Pensions replace employment income at an older age when that ceases, so the comparison is a natural one to make. At the same time, the pay (or earnings) gap is one of the most extensively studied aspects of gender differentiation. It must be noted, of course, that today’s pay gap and today’s pension gaps refer to different groups of people. If evaluated today, pension gaps average income sources of a different generation than the one currently earning income in the labour market. Nevertheless, in order to grasp orders of magnitude, it is important to see how the two gaps compare. Figure 1.4 juxtaposes the headline pension gap with the latest available Gender Pay Gap, produced on an annual basis by Eurostat, based on the Earnings Database.

**Figure 1.4:** Gender Gap in Pension *vis-a-vis* Gender Pay Gap (in unadjusted form)

Source: Gender Pay Gap figures based on Eurostat’s Earnings Database for 2010

Notes: (a) The unadjusted Gender Pay Gap (GPG) represents the difference between average gross hourly earnings of male paid employees and of female paid employees as a percentage of average gross hourly earnings of male paid employees. The population consists of all paid employees in enterprises with 10 employees or more in NACE Rev. 2 aggregate B to S (excluding O).

A first observation is that pension gaps are considerably wider than pay gaps: the average pay gap (16%) is less than half the pension gap (39%). This is expected given that women work fewer hours per year as well as receiving less on a per hour basis. Thus a given pay gap is magnified into a wider annual earnings gap. Of course, women also work fewer years, and hence we would expect an even wider career

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48 In the study of ageing a key distinction is between age groups and cohorts (i.e. people born at a particular time period): Today’s 60-year olds (born around 1950) may behave differently than the 60 year-olds of 1990 (who had been born around 1920). At any one time, however, the two concepts coincide. One should always be careful of making generalisations based solely on age, as these may be due to a cohort effect and hence not hold in the future.
earnings gap. It is the latter earnings concept that most pensions systems base the pension calculation on. A large difference is thus only to be expected. Second, there appears no simple relationship linking the two indicators. The country with the widest pay gap (Estonia) is the one with the lowest pension gap. Pension systems can intervene on market outcomes in very meaningful ways. Third, the dispersion in pay gaps appears to be lower than that for pension gaps. A clearer picture of a relationship between pay and pension gaps, can be derived from the scatter diagram linking the two sets of observations. Figure 1.5 plots pension gaps against pay gaps. We must remember that the two sets of data can not be linked with a direct causal relationship, as they refer to different people: in particular a young cohort working and an older cohort drawing pensions. It is partly to underline this fact that the pension gap appears as the x-axis of Figure 1.5.

Figure 1.5: Gender Gap in Pension vis-à-vis Gender Pay Gap

Source: Data from Figure 1.4

The scatter confirms the impression that there is no simple linear relationship between pension and pay gaps across countries; the line of best fit is almost flat and explains a tiny part of the variation
relationships, characteristics countries by Gap reproduce emerging significant (R^2=0.016). However, one could, tentatively, discern two separate relationships – as shown in Figure 1.6 by splitting the first scatter into two panels. Given that the relationship essentially reflects (clusters of) characteristics of the pension system, as well as historical factors, it is preferable to think of two linear relationships, than a single U-shaped non-linear one. The first panel shows an inverse relationship with pay – i.e. a low pension gap despite a high pay gap. This group of countries is comprised of transition countries plus Denmark and refers to a pension gap lower than 27%. This effect would be created by pension systems including some kind of age pension. In the second group of countries, (those with a pension gap above 27%, and clustered around the EU average), there can be seen a kind of positive relationship between pay gaps and pension gaps, such as would be produced by pension systems which reproduce the labour market situation (e.g. if they are based on social insurance principles). If a relationship exists, it is interesting that it would be relatively steep – i.e. pension gaps tend to magnify pay gaps. Poland and possibly Finland could be classified in either group.

Data derived from the Statistics on Income and Living Conditions (EU-SILC) comprise the bulk of our analysis. When one looks for ‘the’ gender gap in pension, EU-SILC would be the natural place to look. However, it is important that this information is cross-checked against other data sources; it is also significant to be able to supplement the information which exists in EU-SILC for particular questions with other sources of data which might go into some questions at greater depth or might approach a particular question from a slightly different angle. Data derived from SHARE (the Survey of Health, Ageing and Retirement in Europe) will be used in a number of occasions to supplement the picture emerging from EU-SILC. It is thus important at this stage to compare the two sources and to be aware of their key differences, in order to discount answers derived later on in the analysis. Figure 1.7 compares SHARE wave 2 data from the data derived from Figure 1.1 (what has been called the ‘headline Gender Gap in Pension’) for the same countries. Switzerland is included in SHARE but not in EU-SILC.

**Figure 1.7:** Gender Gap in Pension: Evidence from SHARE vis-à-vis EU-SILC

![Gender Gap in Pension: Evidence from SHARE vis-à-vis EU-SILC](image)

**Source:** SHARE (Survey on Health, Ageing & Retirement in Europe), wave 2 (2006/7) and EU-SILC 2010
The first thing to notice is that the ranking of countries is comparable. Germany (followed by France have the widest gap, the Czech Republic and Denmark among the narrowest. Share estimated gaps (with the notable exceptions of Italy and Poland) tend to be lower. This could be due to a different definition of income (SHARE reported figures are net of tax – see Figure 7.1 for the equivalents in EU-SILC); it may also be due to the inclusion of alternative or supplementary pension sources, as a result of a more detailed pension questionnaire. Some of the differences could also be due to a different reference period (SHARE 2006/7, EU-SILC 3 years later). However it may be, the differences between SHARE and EU-SILC are not such as to preclude SHARE as a supplemental source of information. In order not to confuse matters with alternative estimates for the same concept, an attempt is made to present SHARE information after normalization – i.e. to express values relative to a particular yardstick (e.g. as an index number) – rather than in absolute magnitudes.

2.2 STEP 2. Introducing Coverage effects – the prevalence of zero pensions

A key characteristic of a pension system is its coverage: whether it leaves some people without pensions at all. In pension systems that include an age pension, paid to all citizens past a certain age, the prevalence gap will be zero. In contrast, we might see prevalence gaps emerging in social insurance systems where the right to an old age pension is dependent on a minimum number of years of contributions. In many such systems, in a distinct echo of the Male Breadwinner Model, rather than a married woman who has insufficient years of contributions being entitled to her own pension, the husband’s pension is augmented by a married allowance. In the latter case, we might expect to see a large prevalence gap to be associated with a larger pension gap and even greater gap if zero pensions are included (Figure 2.1).

**Figure 2.1:** Gender Gap in Pension and Gender Gap in Coverage by the pension system
Figure 2.1 charts the coverage gap on the same graph as the headline gap. In most countries, the entire population of men and women have active links and access to the pension system. All the countries in the group with high pension gaps come into that category (Luxembourg, Germany, the Netherlands, Cyprus and France); pension gaps are caused by women receiving low pensions, rather than not having access to pensions at all. On the contrary there are countries where coverage gaps tell a large part of the story: In Malta 34 % more women than men have no pension; in Spain 27 %. Other countries with a large group of women with no pension are Belgium (27%), Greece (13%), Ireland (16%) and Austria 12%, while Romania and Italy have values a little over 5%. Negative values (more men than women having no pension), in Slovenia and Finland are probably due to a misclassification of disability pensions.49

2.3 STEP 3: The combined picture: the elderly pension gap

It is possible to combine the story told by the pension gap and the coverage gap in a single indicator, one based on the entire population. It would rather naturally be termed ‘the elderly pension gap’ as it includes everyone over 65, whether they have a pension or not (i.e. it would include individuals with zero pensions who are absent from Figure 1.1). Figure 3.1 shows the elderly gap for 2010, also noting the value of headline gap.

Figure 3.1: The Gender Gap in Pension among the elderly: persons aged 65+

The overall gap is somewhat higher at 42% as opposed to 39%. However, in those cases where there exists a large coverage gap, the elderly pension gap is massively affected. Spain, is now the country with the widest gap which at 52% is 16 points (and 63%) higher. Malta follows closely increasing from 21% to

49 Disability pensions paid to people over 65 should be classified as pensions; this appears not to be the case for Slovenia and the Czech Republic. If such pensions are reclassified, the ‘anomaly’ disappears. However in subsequent tables the EU-SILC practice is preserved.
49%. For those two cases, bringing coverage in the picture alters the impression gleaned by the headline gender gap almost completely: the fact that women’s pensions are (relatively) high compared to men is due to the large number of women being excluded from pensions altogether. This may be reinforced by a selectivity effect: In systems where few women work (or do not drop out), those who are working may be disproportionately better paid. This, by raising women’s pensions (and earnings) might depress observed pension (and earnings gap) for that selected sub-group.\textsuperscript{50} Considerable (though not as large) differences are noted in the other countries with sizeable coverage gaps: Belgium, Ireland, Greece, and Austria.\textsuperscript{51}

What implications of this discrepancy between the elderly and the headline gaps depend largely on the viewpoint adopted. The countries where a coverage gap exists have pension systems based on the social insurance principle, whereby the right to a pension is earned through the payment of contribution. The existence of a coverage gap simply reflects the fact that many older women had limited involvement in paid labour. However, it must be pointed out that other countries also following the social insurance paradigm (e.g. Germany, France) ensure that all of both men and women have access to a pension, presumably overcoming the same issue. This observation has important implications about policy actions needed to complete the spread of social protection across all groups of the population.

\textbf{2.4 STEP 4. Cohort analysis: Is the gap becoming wider or narrower over time?}

A key point of interest is whether the passage of time is leading to the pension gap becoming wider or narrower. If over the last generation the situation in gender balance improved in employment, we would expect older individuals to experience worse gender imbalances than younger ones. In the opposite direction, the spread of atypical modes of employment such as part-time working, contract employment or other ways of combining work and family life could imply, as unwanted side effects, larger number of individuals with insufficient (or simply lower) social insurance rights. Though the rapid spread of such contracts in the 1990s imply that most individuals over 65 would have been affected only marginally, this effect could be visible for some countries.\textsuperscript{52} A cohort effect would also be produced by pension reform. Older cohorts faced systems which, by encouraging early exit of women, also condemned them to retire with fewer contributions (and hence fewer rights). Moreover, if (as is often the case), some countries index pensions inadequately relative to inflation, the longer a person has remained in

\textsuperscript{50} This would be the case if women earning above average are more likely to participate in employment.

\textsuperscript{51} The seeming anomaly for Slovenia is due to the issue of possible misclassification of disability pensions noted earlier.

\textsuperscript{52} In the US a large improvement in pay gaps over 50 years had no effect on pension gaps. Even and Macpherson 2004. The reason was differential participation of women to 2nd pillar employer-sponsored pensions.
retirement, the lower his/her pension relative to the average. Figure 4.1 is designed to examine this question by splitting our sample into a younger group (the younger old, aged 65-79) and an older group (the oldest old aged over 80).

**Figure 4.1: Gender Gap in Pension: cohort analysis, all pensions**

Figure 4.1 plots in histogram form the headline gap for the younger group and on the same graph, the same indicator for the over-80 group. It shows, contrary to most expectations, that the younger group faces considerably wider pension gaps than their predecessors. The average pension gap for the younger group is 41%, whereas for the older group it is 8 pp lower, at 33%. Differences are especially marked in the Netherlands, Greece, Ireland, Austria and Italy. In contrast in France, Germany and Denmark there is no discernible difference, while in some smaller countries (Slovenia, Lithuania, Romania, and Estonia) gender gaps widen with age; in pension reforms in Eastern countries older individuals were less affected than those who retired earlier – the effect of grandfathering. The more time passes since the reform, the more we will see the effects of the new system.  

We must be careful not to conclude from the above observation that the gender gap in pension problem is getting worse. In older age groups survivors’ pensions given to widows become very common. This type of pensions would depress gender gaps in pension; if men have higher pensions, their widows would correspondingly increase the average of pensions drawn by women. A simple solution would be to include only pensions given to individuals as a result of personal entitlement (i.e. old age plus disability) and to exclude survivors’ pensions. However, this is not possible in EU-SILC data, as survivors’ pensions given to individuals over 65 are reclassified as old age protection. To compensate for this, it is

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53 In the ‘German Study’ reviewed later, a key finding was a massive difference in gender gaps between the Eastern (ex-socialist) and Western parts of the country.
possible to exclude all widows from the analysis of Figure 4.1, hence leaving in the sample only pensions drawn as a personal right (Figure 4.2 – for non-widowed persons).\textsuperscript{54}

**Figure 4.2:** Gender Gap in Pension: cohort analysis, all pensions, for non-widowed persons

![Gender Gap in Pension: Non-widowed persons, by age group](image)

Note: In Malta the number of observations, by gender, of persons aged over 80 years is less than 30.

Figure 4.2 partly confirms our supposition that survivors’ pensions act in an equalising fashion. Though the average pension gap is still wider for the younger group, the distance between them is much smaller. There is also probably a selection effect: life expectancy is lower among disadvantaged groups. In some countries (e.g. Belgium, Denmark, Germany, France) the younger group faces lower pension gaps. However, taking out of the sample a differentially large percentage of observations between the two cohorts is bound to affect the results, most probably in the direction of reducing gender gaps among the older group.

Given the policy importance of the question of whether the passage of time is making gender imbalances better or worse, it is worth posing the same question to our alternative data source, SHARE. That data set allows us to selectively subtract survivors’ pensions from individual incomes, leaving only pensions based on own rights. In the case, for an example, where a widow has both a pension based on her own contributions and a survivor’s pension from her husband, we can focus only on the former. Figure 4.3 examines whether, looking at all pensions with the exception of survivors’ pensions, the younger group faces a wider or narrower pension gap. It normalises all gaps relative to the pension gap based on the pension gap of the younger cohort (65-80=100) using total pension income (i.e. the equivalent of Figure 4.3).

\textsuperscript{54} This would be strictly not problematic if widowhood was completely random. However we know that the average difference in age among spouses is not random and could hence ‘contaminate’ our results.
**Figure 4.3:** SHARE Cohort analysis, all pensions; without survivors'

![Indexed Gender Gap in Pension, by cohort (65-80 =100): Based on Total Pension Income and on Pension income without survivors' benefits](image)

Source: SHARE (Survey on Health, Ageing and Retirement in Europe), wave 2 (2006/7)

Notes: In Sweden, there is no separate answer category for survivors’ benefits; hence pension income without survivors’ benefits can not be estimated for Sweden.

The cohort picture emerging is mixed. In some countries pensions of younger cohorts exhibit greater gaps (GR, DE, AT, SE); in others they exhibit smaller ones (FR, ES). The effect of abstracting from survivors’ pensions is larger for the Netherlands, Greece, Austria, Poland, Denmark and Czech Republic. In contrast, in Belgium, Italy, Switzerland and Germany the differences are smaller.

*Concluding this inquiry, it is fair to say that, though there is some evidence that pensions due to individuals own contribution history are becoming more balanced by gender, this is a process that proceeds at different speeds across Europe, mediated by characteristics of the pension system.*

The investigation by cohorts was based on the comparison between two cohorts, both over 65. What of the situation of those entering retirement age, i.e. those aged between 50 and 65?

It will be recalled that this group was excluded from the analysis, on the grounds that any picture emerging will be dominated by factors related to the process of exiting the labour market, rather than the more structural long-term forces that would affect people who rely totally on pensions. Nevertheless, at this point it is appropriate to see what kind of gender gaps are being faced by this group. In particular, whether there are any discernable trends that would affect the situation in future affecting the older group, as this younger age group approach 65. Figure 4.4 looks at the combined prevalence and pensioner gap picture, in a manner equivalent to Figure 2.1.
Figure 4.4: Gender Gap in Pension and Gender Gap in Coverage by the pension system, persons 50-64

Note: Negative values in Prevalence Gap indicate that more men are receiving pension than women.

The first thing to notice is that there is a far more complex picture regarding prevalence\(^{55}\). In those countries where individuals receive an age pension (at 65 or 60 in some cases), women at ages below 65 are less likely to receive pensions than men. This would appear as negative prevalence gaps (e.g. in the Baltic States, Slovenia, Romania Austria). It would be counteracted by a tendency of those women who are working to exit into retirement before men (e.g. due to lower minimum retirement ages). As regards pension gaps, if women retire earlier with fewer contributions (and hence a lower entitlement to pensions), whereas those women who continue working will end up with higher pensions, then gender gaps calculated for this group would be seriously over-estimated relative to the picture that will emerge at our headline indicator of over 65\(^{56}\). The same would result if lower-paid men retire earlier with a lower pension. We see, for example in the Netherlands, the Gender gap is wider for this group than for the group 65-80; this observation also holds for Greece, Belgium and France. In contrast, for most countries pension gaps are lower: the EU-27 average is 34% for those below 65, and 41% for the immediate older cohort. Thus, though, it would be tempting to conclude that the ‘stored change’ embodied in this group who will enter full retirement in the next 10 years’ is positive, no such conclusion is possible, essentially due to the heterogeneity of that population group.

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55 The group of pensioners below 50 is not examined at all, as it would be dominated by disability pensioners and is likely to be even more heterogeneous.

56 They would exclude those women who will receive a higher pension later and are not included in the under-65 pension data.
2.5 **STEP 5: Are the pension gap differences due to lower education for older women?**

The observed differences in pension gaps may be due to differences in the average experience for men and women. Pensions are linked to lifetime contributions, which are themselves a function of career earnings. In sample surveys the variable most closely associated with long term earning potential is education. Thus by seeing the effect of education we are getting close to the idea that differences in pensions may be due to different endowments of men and women of earning potential.

**Figure 5.1**: Distribution of educational level, by gender (persons aged 65+)

**Figure 5.2**: Number of years in education by gender, by cohort

Note: Years derived by imputing number of years to educational levels

Men, for example, may systematically have higher pensions if they have more educational qualifications, i.e., more ‘human capital’. Figure 5.1 shows that gender differences in education among this older group

57 Corresponding to what economists call ‘permanent income’ – i.e. disregarding short term fluctuations and chance factors.
of Europeans are considerable. Figure 5.2 shows that, in all cases, the differences are wider in the older group in all parts of Europe. What is also striking is the very wide divergence in educational attainments between the South of Europe and the rest – a difference which (thankfully) has shrunk decisively among working age cohorts.

Examining education and human capital entails proceeding in the direction of examining possible determinants of gender gap in pensions are; alternatively it may be seen as an investigation of the extent to which the observed headline gender gap in pensions are due to composition effects. Given that education differences are the most important determinant of human capital endowments (and hence of income differences), disaggregation of the pension gap by education would be a natural starting point.

Figure 5.3 charts – for each of the 27 member states and for the EU-27 average – the separate gender gap in pension according to educational attainment. The latter is distinguished into primary (or less), secondary and tertiary. For purposes of comparison, in each country is noted the average (headline) gap. Given that the pension gap for each educational level is calculated relative to men of that same educational level (rather than the average for all educational levels), it is perfectly possible for all three gender gaps by education to be below (or above) the overall average. For the EU-27, those with primary education exhibit lower gender gaps. In terms of member states, this applies to Germany, UK, Greece, Ireland, Sweden, Spain and Portugal. However there are cases where the opposite holds, such as Spain, Portugal, Austria, and Romania. Higher education carries a wider gap in the Netherlands, Sweden, Denmark, possibly due to the effects of the second pillar, magnifying underlying earnings differences.58

What is the combined effect of education and cohort? An interesting question is to what extent educationally-based differences are shrinking among (the better educated) younger cohorts. The EU-27 average seems to be hinting at such an effect (the difference between gender gaps between primary and secondary education is 8.9 percentage points for the older group and is halved at 4.3 point for the younger group). However the variation around this average is very considerable and sample sizes (especially for university educated women) rather small. The above exercise looked at differences within educational classes. We know that future generation of pensioners will be more evenly balanced in terms of educational achievement; we would thus see a displacement of the importance of gender gaps corresponding to higher educational classes. In this respect, we would expect a rising profile as that evident in EU27 to translate to a tendency for gender gaps to widen with time.

58 It is often found that the higher the earnings, the higher the gap and the lower the earnings the lower the gap. These results are echoed here and could be due to the same underlying causes: the glass ceiling in career and earnings at the top, whereas at the bottom there is less scope for differentiation.
**Figure 5.3:** Gender Gap in Pension (%), pensioners aged 65+, by educational level

**Notes:** Horizontal lines in red, portray the total (overall) country average gender gap in pension.

° indicates that the number between 11 and 30; °° indicates sample size < 10 observations.
2.6 STEP 6: How is the pension gap related to the level of pensions? Distributional calculations

So far we have been talking of pension gaps by comparing the average woman pensioner with the average man pensioner. We began to depart from this rule when we considered gender gaps in pension separately by education category. It is thus important to ask now how pensions are distributed around that pension average.

This exercise is distinct from the previous one in that whereas education is linked to potential earnings and long term factors (prior to the filtering by the pension system), looking at the distribution according to pensions is equivalent to looking at final pension outcomes (after pension filtering). Thus, though earning capacity is linked to education, it is at some removes distant from pension outcomes. So, we should not be surprised if the pattern of effects differ between a distribution by education and one by pension level.

One way of doing that is to ask whether we find more or less women among individuals who have a lower pension. We thus take the distribution of men’s pensions for each country and we note the pension levels that distinguish pensioners into three groups: Those of low pensions (bottom 33%), middle pensioners (between 33% and 66% percent) and high pensions (top 33%). The distribution of income thus defined according to men’s pensions is then matched to the women’s distribution.

We therefore ask what proportion of women receive a pension less than the men’s cutoff point, that is the amount that the richest man of the bottom 33% receives? If the distribution of women is no different than that of men the answer would be the same as for men, i.e.33%; if women are more concentrated among low pensions their share would be more than 33%; if women are pension-richer, it would be less than 33%. The result appears as Figure 6.1. Thus, for the EU-27 average, 64% of women are ‘squeezed’ into a pension range that holds the poorest 33% of men (which could be expressed as saying that there are 1.9 times as many pension-poor women as poor men; or for every pension-poor man there are 1.9 poor women). Among high income pensioners, women are correspondingly underrepresented – only 11% of women reach the pension enjoyed by the richest third of men (for every 3 pension-rich men there is less than one pension-rich woman). This effect – of overrepresentation of women at the bottom and under-representation at the bottom – can be expressed more intuitively by means of odds ratios. Dividing the proportion of men at the bottom (33%) with the proportion of women who are ‘squeezed’ in the same income range can be expressed quite simply as ‘how many poor women are there for every poor man?’; equivalently ‘how many rich women for every rich man’ and ‘how many women for every middle income man?’ Thus figures over one imply overrepresentation; less than one the opposite.
Figure 6.1 shows that women are overwhelmingly overrepresented (by a factor close to two) in low pensions and equivalently underrepresented in high incomes. Only in Estonia does the distribution of women follow almost exactly that of men, followed possibly by Slovakia. In Denmark, women do slightly better than men for low pensions (0.9), but worse for high pensions. At the other extreme – high incidence of lower pensions among women - are the Netherlands, Germany, Norway, Sweden and Bulgaria (all well above 2 for the bottom third); the same group of countries do badly at the top end – where less than 10% of women are able to attain the pension that the top 33% of men can attain. A third group of countries, whilst overrepresenting women at the low end, come close to parity i.e. 30% at the middle: the UK, Greece, Ireland, Portugal, Italy, Finland, Poland, Hungary, and Latvia.

The above exercise examines whether women are less or more likely to have low (or high) pensions than men. To judge how the pension distributions by gender differ we may also try separately comparing the gender gap for different parts of the pension distribution. If we divide men and women into thirds, we can see how far men’s low pensions are greater than women’s low pensions – i.e. a separate ‘tertile gender gap in pension’. The result appears as Figure 6.2, where each of the three tertile gaps is shown together with the headline gender gap for each of the 27 member states and the EU average.

For the average of EU-27, there is a wider gap for the bottom third, whereas the other two thirds are close to the average. This is a pattern followed in many other countries, notably Germany, the UK, France, Austria, and Belgium. In contrast, there are some member states where the lower gender gap is considerably lower than the average: Greece, Ireland, Portugal and Denmark are notable examples. There is notably greater imbalance at the high end in Denmark, Finland, Ireland and Malta. Finally, in the Netherlands, Spain, Italy, Slovenia and (possibly) Sweden gender gap in pensions appear not to differ by income level. An interesting question arises when these results are compared with those in education. Given the close link between education and income, one would have expected the current exercise to
Figure 6.2: Gender Gap in Pension (%), pensioners aged 65+, by pension income tertile

Note: Horizontal lines in red, portray the total (overall) country average gender gap in pension

mirror the one on education. However, this is not the case. Pension systems alter the underlying earnings/income situation, most notably by the operation of minima (e.g. the age pension) or maxima
(maximum social insurance pension). These results are somewhat at odds with the results for education. However, this should not surprise us. The pension system is not a neutral filter: Minima and maxima for pensions as well as contribution requirements are sufficient to radically transform a relationship based on education (and hence on long term factors).

The above exercises attempt to see how widely dispersed pension are for men and for women. A simple alternative way of approaching this issue is to see how ‘spread out’ are the two distributions in those parts that hold the majority of people, i.e. the middle of the distribution. The interquartile (IQ) range is the range of incomes that holds the middle 50% of a distribution; counting from the bottom if the poorest 25% of men has a pension of EUR 500 and the top 25% has a pension of EUR 2500, then the interquartile range is EUR 2000. A simple way to gauge the shape of the distribution is to calculate the relative interquartile range – i.e. whether the middle 50% of men are ‘spread out’ between pensions which are further apart than for men. Figure 6.3 shows the results by normalizing so that men’s IQ range is 100.

**Figure 6.3: CV and Interquartile range**

![Distribution of Pension Income by Gender: Relative Interquartile range (Q3 - Q1); Men=100](image)

**Note:** The interquartile range is set to be equal to 100 for men in each country. Hence, a relative interquartile range >100 for women indicates that the interquartile range is higher in women’s pension distribution compared to men’s. The opposite is the case for values which are <100.

The middle of women’s pension distribution is more thickly populated than that for men, meaning there is less dispersion and more women tend to receive similar pensions. For the EU average, women’s IQ range is shorter. However that hides some striking differences, in Ireland the value of that indicator is only 14, whereas in Slovakia it is 140% and in the Czech Republic 114. Germany and Austria are higher than the EU average. The countries fall into a large group where the relative IQ range is around 70 (eg. the UK, Sweden, Italy, Poland, Denmark, and Hungary) and a slightly smaller group where they are more densely distributed around the middle value (Denmark, Portugal, Greece, the Netherlands, Portugal, and Spain).
2.7 STEP 7. Does tax make a big difference to the pension gap?

The data from EU-SILC are reported on a gross of tax basis, i.e. before the deduction of income tax and social contributions. An interesting question is whether the deduction of tax alters the gender gap in pension. In progressive income tax systems, higher pensions would (presumably) be subject to higher marginal tax. However, given that most un-earned income accrues to couples and can be manipulated to minimize the tax obligation, the extent to which marginal tax rates would rise as a result of taking into account other income is likely to be dampened; if tax engineering leads to income from property being taxed at the rate of the poorest partner it may even correct for gender imbalances. Thus we would be surprised if the decision whether to use pensions net or gross of tax would make much difference to our calculations.

Figure 7.1: Gender Gap in Pension based on gross and net pension Income, Pensioners 65+

This supposition is largely confirmed by Figure 7.1. The average for those member states where both net and gross pension gaps can be computed is 39% for gross income and 37% for net income. In most individual countries the two figures, as expected, almost coincide. Considerable differences exist only in Cyprus (net -7 pp), Italy (net -5 pp) and Finland (net +20 pp). It is a matter of investigation whether those large differences reflect features of the tax system or are due to problems of the methods used by those countries’ statistical authorities to transform net into gross magnitudes. The existence of six EU countries that have produced no data could signal that the process of producing net of tax data is still being developed.

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59 In some member states the data as collected in the questionnaire may be net of taxes, if that is a more familiar way of expressing pensions. In that case the data are converted into gross magnitudes by applying a tax model. This is done by each national statistical institute before the data are communicated to Eurostat.
2.8 STEP 8: Can we discern trends in the pension gap over time?

A question that any policy analyst would pose is whether there are any indications that things are improving over time or not. As we saw in the motivation of this report there are grounds to suppose each of these statements may be true. If pension gaps are the result of past injustices we may expect things to get better; if they are premonitions of future problems, they may be getting worse. However, both of these phenomena are likely to operate over the longer term and are unlikely to be visible in changes from year to year.

Given that EU-SILC has been available since 2005, a five-year comparison i.e. between 2010 and 2005 is the longest time comparison which is currently feasible. Given that EU-SILC (2010) refers to 2009 incomes this (in most countries, though not, say in Latvia or Hungary) would predate the major impact of the economic crisis. Figure 8.1 compares the ‘headline gender gap in pension’ for the two years 2005 and 2010.

Figure 8.1: Trends in the Gender Gap in Pension over time

Contrary to some expectations, gender gaps in pension appear to be widening over time. The EU average is greater by 1.7 pp (a 5% increase). This however is the result of some larger deteriorations in some countries: Denmark (6.4pp) The Netherlands (5.4pp), Germany (4.2pp), the UK (2.8pp). On the other hand, there are opposing trends towards greater gender balance in Italy (-4.4), Belgium (-4.9), Latvia (-7.7). In a third group there is little change (Greece, Ireland, Portugal, Finland and Hungary).

Between 2005 and 2010, according to the EU-SILC data, in some countries there were some notable differences in coverage. In particular, important gaps in coverage were filled in Denmark (where the number of people without pensions was reduced by around 7pp for both men and women). Smaller advances in making up for coverage gaps were noted in Portugal (4.3pp reduction), France (1.7pp) and
Greece (1.6pp). Much more worrying, though, is the fall in coverage among women in Ireland (where the coverage gap increased 6.6pp). The overall picture can be gleaned from the elderly gender gap in pension, which combines both coverage and pension gap (Figure 8.2). The picture differs from the headline pension gap variations over time only for those countries where there was a coverage change. Ireland, for example, registers an increase in gender gaps by 6pp.

**Figure 8.2: Gender Gap in Pension among the elderly**


2.9 **STEP 9. Do pension gaps reflect broken careers for women? What of labour force involvement?**

An important hypothesis explaining gender gaps in pension is that gender gaps in pension to a large extent are a reflection of women’s low and intermittent involvement with paid labour in the past. In particular, especially in past decades, a large number of women dropped out of the labour force in order to fulfill their family responsibilities. This may have reflected personal choice, but may also have been imposed on them by insufficient child care facilities, infelicities in maternity leave etc.

In order to gauge the effect of ‘broken careers’ using EU-SILC data it is important to note that what a ‘broken career’ means will be different from one country to the other – i.e. has to be defined according to what is considered ‘normal’ in each country. To define what a broken career means, and to classify women into four categories according to labour force attachment, we have taken a mixed approach. Women with number of years of employment greater than the median years for their country were judged not to have a broken career problem. To classify the remainder we note that in those countries

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60 The (unweighted) median value of years in paid work in the EU as a whole (but excluding Sweden, Denmark and Finland which do not report this variable in the SILC survey) is 28 years for men, 21 for women, with little change if we average out the single country’s median values in lieu of calculating the median at the aggregate EU level. For women, however there is considerable dispersion across countries: from 10 years in Malta and 16 in the Netherlands to 29 years in the Czech Republic and 30 years in Hungary.
that base their system on social insurance principles, the cut off for being entitled to a pension ('vesting') is usually 15 years. Thus, it makes sense to define three groups: women with years of employment between 0-15; those between 15 and the median; greater than the median. Many (perhaps most) women who have fewer than 15 years work would have worked after leaving school and at the early stages of building a family; thus at the age of 65 their involvement in employment may only be a distant memory. Given that many pension systems have vesting requirements a woman who may have worked in the 1970s for 4-5 years would, for social insurance purposes, be treated in the same way as someone who has never worked. Both would only receive an age pension, or a means tested 'citizens' pension at 65. This is the reason for aggregating the ‘never worked’ group with those with few years of contributions. Table 9.1 shows the classification of women into the three groups. It further breaks the low category into those with 0-10 and those between 11-14 years in employment.

Table 9.1: Classification of women over 65 according to broken careers status

<table>
<thead>
<tr>
<th>Country</th>
<th>0-10 years</th>
<th>11-14 years</th>
<th>&gt;median years in employment distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>LU</td>
<td>43,4</td>
<td>6,1</td>
<td>25,4</td>
</tr>
<tr>
<td>DE</td>
<td>18,8</td>
<td>6,1</td>
<td>25,4</td>
</tr>
<tr>
<td>UK</td>
<td>14,3</td>
<td>11,1</td>
<td>26,1</td>
</tr>
<tr>
<td>NL</td>
<td>50,3</td>
<td>49,4</td>
<td>49,7</td>
</tr>
<tr>
<td>CY</td>
<td>43,0</td>
<td>3,9</td>
<td>49,5</td>
</tr>
<tr>
<td>FR</td>
<td>28,6</td>
<td>17,6</td>
<td>49,1</td>
</tr>
<tr>
<td>GR</td>
<td>26,0</td>
<td>23,1</td>
<td>49,6</td>
</tr>
<tr>
<td>IE</td>
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<td>4,3</td>
<td>49,6</td>
</tr>
<tr>
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<td>5,5</td>
<td>49,9</td>
</tr>
<tr>
<td>ES</td>
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<td>49,5</td>
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<tr>
<td>PT</td>
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<td>RO</td>
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<td>EE</td>
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<td>57,6</td>
<td>41,4</td>
</tr>
</tbody>
</table>

Broken careers appear to be a major issue: in nine countries, where more than one out of four women had been in employment for less than 14 years: Luxembourg, Cyprus, France, Greece, Ireland, Spain, Italy, Belgium and Slovenia. On the contrary, in most Eastern European countries (with the possible
exception of Poland and Romania), broken careers (in the sense of a large number of women with fewer than 15 years’ work) appear to be less of an issue. The next step is to apply this categorization in order to compute gender gaps for each gradation of broken career. To do this, and in order to get around the problem that broken careers are an exclusively female issue, the average pension for women in each broken career category is compared to the overall mean pension for all males. (In this way all three computed gender gaps in pension have the same denominator).

Figure 9.1: Gender Gaps in Pension (%) by broken careers

Notes: Horizontal lines in red, portray the total (overall) country average gender gap in pension (%)
* indicates that the number between 11and 30; ** indicates sample size < 10 observations.
In almost all countries, women with working life less than 14 years exhibit significantly greater Gender Gap in Pension income. In Germany for instance women who had been in employment for less than 14 years appear to have two times higher Gender Gap in Pension income (64.1%) compared to women with the ‘median’ working life (31.8%). Similarly in France, Austria and to a lesser extent in Spain. The ‘dominant pattern’ holds broken careers being associated with greater pension gaps; as years of employment increase past the median, pension gaps shrink. However, in Bulgaria and in Poland there appears no significant variation across different working life categories. Greece is the sole exception where, remarkably, gender gaps are higher for women with the ‘median’ working life. This extraordinary result may well be an artifact of the fragmentation of the system into occupational categories, each with very different generosity.61

One of the key supposition mentioned in the motivation of this step was that across cohorts broken careers might be becoming more of an issue in some countries (replacing people who never entered the labour market) and less in others (reflecting better possibilities in reconciling family life with work). For this reason we reproduced Figure 9.1 by cohort; in order to abstract from the equalizing effects of survivor’s pensions we excluded widows (i.e. similarly to Figure 4.2). The result appears as Figure 9.2.

The picture emerging is complex and is difficult to generalize.62 The finding of the previous exercise that broken careers lead to wider gaps is reproduced for both cohorts. Though the difference is not striking, ‘Working careers’ may be tentatively seen to matter more in reducing Gender Gaps for the younger cohort. This is more noticeable in UK, Cyprus, Spain and Belgium, where the Gender Gap in Pension for women aged 65-80 years is decreasing gradually as we move from working careers of less than 14 years to ‘median’ working life careers, while this is not the case in these countries for women aged over 80 years. In France and Germany the shape of the response is maintained, with a lower gender gap penalty for full careers. Greece, once again is an outlier.63

Given the centrality of the issue of broken careers, it was also investigated using data from SHARE. In that survey, rather than simply asking a single question about the number of years worked, the working career was followed in detail and each working episode was separately identified. Table 9.2 shows the years of employment by gender for the 13 countries that participated in SHARELIFE (wave 3 of SHARE).

61 A short career may be a marker for employment in the government sector (with generous pensions); a long career may be a proxy of agricultural employment.
62 In many instances (noted by asterisks) the data relies on only a few observations,
63 A sensitivity analysis was also conducted, altering the definition of what a full career is by +/- 10% of each country’s median. Once individuals of longer career were identified as full, the EU average gap estimated fell. However there were many exceptions.
Figure 9.2: The Gender Gap in Pension (%) by broken careers 65-80 excluding widows; and 80+ excluding widows

Notes: Horizontal lines in red, portray the total (overall) country average gender gap in pension (%)
* indicates that the number between 11 and 30; ** indicates sample size < 10 observations.
We can see that in all countries women (even if constrained to have entered the labour market) have shorter careers by a very large margin\textsuperscript{64}. Men tended to have worked by almost 40 years, women between 20 and 30. We may note the large number of women who have never entered the labour market in Greece, Spain and Italy. However, even ignoring zero values, the lowest year gap is 4.7 years in the Czech Republic and the largest (22.2 years) in Spain. We see large gaps in the Netherlands, Switzerland, Austria and Belgium (>15 years). Germany, France, Sweden and Denmark have working differences of around 10 years.

In order to categorise SHARE respondents into groups by degree of attachment to the labour market, women were compared to men in their own country. Thus the groups were broken into: no employment, less than 10% of men’s average employment, 10%-50% of men’s employment and equal or greater than 50%. The classification appears in Figure 9.3: the proportion of women who have never been in employment or who have worked for less than 10% of men’s number of working years exceeds 50% in all but two countries (Poland and Czech Republic), reaching almost 70% in Greece, Austria, Italy and Belgium, and exceeding 80% in Netherlands and Spain.

\textsuperscript{64} It may be objected that women in Table 9.2 have short careers because they have also retired before men. However, if we calculate years of employment before age 50 (which would largely do away with this problem), the large differences remain.
Figure 9.3: Distribution of women’s working career vis-à-vis men’s

Source: SHARE, wave 2 (2006/7) and SHARELIFE (2008/9)

Figure 9.4 examines the effect on gender gaps of separately identifying the four groups of employment attachment. The penalty exacted by a broken career is all too obvious. Even in Denmark and the Czech Republic (where gaps are lower anyway), the gap for shorter careers is of the order of 15%. The most common situation is for the short career gap to be between 40 and 50% (e.g. Germany, France and Italy). If survivors’ pensions are excluded (not reported) that penalty becomes even larger, reaching 68% in Italy ad 62% in France). The reverse effect in the Netherlands and Austria is probably due to a small sample size; in contrast the same effect for Greece corroborates the EU-SILC findings.

Figure 9.4: Gender Gap in Pension, by women’s working career in SHARE, all pensions

Source: SHARE, wave 2 (2006/7) and SHARELIFE (2008/9)

SHARE also allows to ask whether the sector of employment makes a difference for gender gaps. It is possible to identify for people who have retired their ‘dominant’ sector of employment of the period they were working. In all cases the widest gaps appear amongst self-employed (Figure 9.5). The public
employees in local and central administration (‘civil servants’), where they could be identified, have very low or even negative gender gaps: given that the civil service has large numbers of low paid men (working for local authorities) but also a fairly large number of high paid women (e.g. doctors and magistrates) that result is explainable. Of course, the civil service can also be expected to keep discrimination by gender low.

Figure 9.5: Gender Gap in Pension, by sector of dominant job

Source: SHARE, wave 2 (2006/7) and SHARELIFE (2008/9)
Note: in Italy and in Poland, there is no civil-servant category in SHARELIFE questionnaire.

2.10 STEP 10. The effect of multi-pillar systems in SHARE

The tendency in many advanced countries is to move towards ‘multi-pillar pension systems’. These systems, supplement State provision of pensions with an additional occupationally-based pension, usually financed through prefunding and calculated as a return on accumulated contributions. Typically each individual would receive two pensions: a pension from the State first pillar system and a second from the occupational system. Of course, people who want may add to those pensions an individually negotiated third pillar pension from an insurance company. Such systems have been in operation since the early ‘90s in Switzerland, the Netherlands and Denmark. They have been introduced recently in Germany and Poland, while progressing towards such a system may be a reform option in the remaining countries. What effect multi pillar systems would have on gender gaps in pension is of major policy significance; by taking part of income replacement out of the ambit of direct public responsibility and subjecting to the logic of accumulating contributions.
Unfortunately EU-SILC does not allow us to examine pillars 1 and 2 separately. The third pillar (individual pension provision) is separately identified, but is, in most country, very small. We can only guess at the impact of multi-pillar system, by seeing whether some effects in those countries with mature pension systems are consistent with the how the operation of a second pillar may affect the data. The weight of analysis should thus fall on SHARE data. Particular attention must be paid to those countries where the second pillar is relatively mature and would thus have spread even in the older population which is the focus of this report: Switzerland, the Netherlands and Denmark are the three cases where we might see what a multi-pillar system would look like.

Table 10.1: Gender Gaps in Pension, by Pillar, SHARE wave 2

<table>
<thead>
<tr>
<th>SHARE</th>
<th>Gender Gap in Pension, by Pillars</th>
<th>Combined income</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pillar 1</td>
<td>Pillar 2</td>
</tr>
<tr>
<td>Persons 65+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DE</td>
<td>34.3</td>
<td>26.4</td>
</tr>
<tr>
<td>NL</td>
<td>-3.1</td>
<td>30.6</td>
</tr>
<tr>
<td>FR</td>
<td>32.5</td>
<td>32.8</td>
</tr>
<tr>
<td>GR</td>
<td>29.9</td>
<td>30.1</td>
</tr>
<tr>
<td>AT</td>
<td>30.5</td>
<td>-49.3</td>
</tr>
<tr>
<td>ES</td>
<td>26.9</td>
<td>25.7</td>
</tr>
<tr>
<td>SE</td>
<td>14.4</td>
<td>29.2</td>
</tr>
<tr>
<td>IT</td>
<td>35.7</td>
<td>32.8</td>
</tr>
<tr>
<td>BE</td>
<td>20.3</td>
<td>-5.3</td>
</tr>
<tr>
<td>PL</td>
<td>23.2</td>
<td>na</td>
</tr>
<tr>
<td>DK</td>
<td>-3.5</td>
<td>43.8</td>
</tr>
<tr>
<td>CZ</td>
<td>10.6</td>
<td>48.7</td>
</tr>
<tr>
<td>CH</td>
<td>-4.4</td>
<td>34.8</td>
</tr>
</tbody>
</table>

Source: SHARE (Survey on Health, Ageing and Retirement in Europe), wave 2 (2006/7)

Table 10.1 examines the headline pension gap for each pension pillar separately. In the last two columns it aggregates pension from the first two pillars, and then also adds the third pillar. The three countries with mature multi pillar systems are shaded. In those countries, the first pillar is gender balanced, in all cases showing a slight advantage for women (negative gender gap). The second pillar, taken on its own for those who have it, yields much larger gender gaps, reflecting the return of contributions. The third pillar in the Netherlands appears to correct some of the gender effects of the previous two pillars. The combined effects of first and second pillar systems in the three mature systems is at the low end of country gender gaps (especially for Denmark). This shows that, at least in aggregate, the first pillar is

65 The third pillar is essentially a means of savings; it is hence debatable whether much is gained by aggregating with the other two.
exerting its influence to restrain gender imbalance effects. The effect of the third pillar, given its small size, is minor; a discernible augmenting effect exists in Denmark and Sweden. In step 13th we shall find that the pillar 3 increases the gender gap in pension in two other, pillar 3 mature, countries: the UK and Germany. As was mentioned, multi-pillar systems were introduced in some countries in the 90s and are spreading through their population. Thus it is important to check how far coverage of the second pillar has progressed through the population (Table 10.2).

**Table 10.2: Gender Gap in Coverage by Pension System, by Pillar**

<table>
<thead>
<tr>
<th></th>
<th>Gender Gap in Coverage by Pension System, by Pillar (Persons aged 65+ years)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pillar 1</td>
</tr>
<tr>
<td></td>
<td>Mean Pension</td>
</tr>
<tr>
<td></td>
<td>Men</td>
</tr>
<tr>
<td>DE</td>
<td>94.0</td>
</tr>
<tr>
<td>NL</td>
<td>93.2</td>
</tr>
<tr>
<td>FR</td>
<td>99.4</td>
</tr>
<tr>
<td>GR</td>
<td>82.8</td>
</tr>
<tr>
<td>AT</td>
<td>98.5</td>
</tr>
<tr>
<td>ES</td>
<td>90.1</td>
</tr>
<tr>
<td>SE</td>
<td>94.5</td>
</tr>
<tr>
<td>IT</td>
<td>90.1</td>
</tr>
<tr>
<td>BE</td>
<td>92.9</td>
</tr>
<tr>
<td>PL</td>
<td>97.4</td>
</tr>
<tr>
<td>DK</td>
<td>96.9</td>
</tr>
<tr>
<td>CZ</td>
<td>96.5</td>
</tr>
<tr>
<td>CH</td>
<td>93.2</td>
</tr>
</tbody>
</table>

**Source:** SHARE (Survey on Health, Ageing and Retirement in Europe), wave 2 (2006/7)

The important point to note is that in those countries with mature multi-pillar systems, there are very important gender gaps in coverage for the second pillar. This is most evident in the older of the mature systems (Switzerland), but also in the Netherlands, where gender gaps are of the order of a third. In contrast Denmark, though overall the spread of the second pillar is more limited, has managed to ensure that the spread is more gender balanced (coverage gap 7%). As second pillars spread to newer generations of pensioners, the combined effect of second pillar coverage gaps and pension gap can be expected to affect overall gender effects to a increasingly greater extent.

**2.11 STEP 11: The effect of marital status and family**

Women’s pension and labour force involvement are closely related to the family status of women. Graph 11.1 examines the effect on pension gaps of women’s current marital status – i.e. single, married (living in a couple), divorced and widow. Average pensions for each category of women is compared to the overall mean for men, to avoid the problem of low sample sizes.
Figure 11.1: Gender Gap in Pension by marital status

Notes: Horizontal lines in red, portray the total (overall) country average gender gap in pension (%)
° indicates that the number between 11 and 30; ** indicates sample size < 10 observations.
Single women in general face lower gender gaps, as do widows. In Denmark single women actually have an advantage over men; this might be due to that group of women having characteristics which differentiate them from other women. Granted that, it is significant that even in this category where broken careers would have lower importance, gender gaps in pension remain sizeable (the EU average being around 17%). In all cases women living in couples have the widest gaps, the EU average being 54%. In many cases this gap even exceeds 60%: In Germany it is 66%, the UK 60%, France 56%.

Divorced women as a category lie between married and single women: for the EU-27 average their gender gap in pension, at 26%, is almost exactly between single and married women. However, given that, unlike married women, divorced women will have smaller access to their ex-spouse’s resources, a given gap will doubtless translate to a greater welfare problem. The treatment of divorce appears to be very system-specific: In France, for example, divorced women fare better than widows and only slightly worse than single women. Eastern European countries do particularly well for divorced women, there being small differences by family status anyway. Portugal and Italy appear to do well for divorced (though the sample for these two Catholic countries is very small).

The problem of small sample sizes precludes examining the question whether the way pension systems treat women of different marital status has changed over time. Current marital status is not necessarily a good indicator of the kinds of constraints women had faced over their working lives. The most significant such factor is child rearing – the number of children that women have had to raise. Given that this information does not exist in EU-SILC, this question was approached using data from SHARE66. The sample of women was divided into those women who had no children, those who had 1-2 and those who had more than 3.

Figure 11.2 reports the gender gap in pension of the three groups of women relative to average pensions for all men. Having children leads to a pension disadvantages everywhere, except in Poland and possibly Austria. In most cases the ‘children penalty’ increases linearly with the number of children; in France, Austria, Denmark and Switzerland there appears to be more than proportionate burden for three children or more children. According to Figure 11.2, the most ‘child friendly’ countries are Denmark and Spain.

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66 The number of children exists for couples of working age whose children are cohabiting. In an older population such as the one we are dealing with here, grown-up children will not be known.
**Figure 11.2:** Gender Pension Gap of women by number of children vis-à-vis men

![Gender Gap in Pension: The effect of motherhood and the number of children on Gender Gap in Pension](image)

Source: SHARE, wave 2 (2006/7) and SHARELIFE (2008/9)

### 2.12 STEP 12: The Intra-household Gender Gap in Pension

**A. Motivation**

The unit of measurement for the gender gap in pension income is the individual. We essentially compare each individual woman pensioner with the average pension for male pensioner and compute the average. This has evident computational and analytical advantages. However, a gender gap indicator can also be meaningfully computed at household level in the case of pension income. In that case, i.e. by looking inside the household, we will be comparing each woman with her own partner, rather than with the population average. Such indicator is also apt to capture relative economic independence between men and women at the micro level. According to a well known argument in economics - the intra-household bargaining hypothesis introduced by McElroy and Horney (1981) - the partner with the largest bargaining power has the largest say in decisions taken at household level. Bargaining power crucially depends on the amount/adequacy of resources each partner would muster in case of separation, and pension income is one such resource in old age.

From a policy perspective, knowledge of the way the intra-household gap behaves in different types of families is clearly important for targeting social provisions; after all, most decisions of how to react to changed incentives of, say, the pension system are taken jointly by the two partners, i.e. are household decisions. However, information about the way ‘her’ pension compares to ‘his’ is very scant (EC, 2012).

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equally, there exist a number of difficult technical and conceptual problems to be overcome. This section makes a start and illustrates some basic findings about the intra-household gap, including essential comparison with the aggregate gap we have been examining up to now. For semantic clarity and consistency, we shall continue to refer to the aggregate gap as simply ‘the’ gender gap in pension (or GGP), while denoting intra-household gaps with GGP-H.

**B. Measurement**

As with measurement of the GGP, we propose two ‘headline indicators’ in order to track gender imbalances in pension income within households, namely, the intra-household gender coverage gap and the intra-household pensioners’ gap. Underneath the similarity of concepts and labels there are, however, important differences between the two sets of headline indicators. The first difference concerns the sample. In analogy with the criteria used for the GGP we consider the population older than 65, but in the intra-household case the sample is also confined to couples where at least one of the members receives a positive pension. This introduces additional and complex sample selection issues. Therefore:

- **the intra-household coverage rate** indicator measures the extent to which more women than men receive no pension among households where at least one member is a pensioner.

- **the intra-household pensioners’ gap** provides a summary measure of gender disparities within households where both members are pensioners.

Additional differences concern the measurement of the pensioners’ gap. In analogy with our measurement of the GGP, we consider both the median and the mean values for the GGP-H. For reasons that are spelt out in the footnote, however, the mean GGP-H gap can be unduly influenced and is more sensitive to extreme values (outliers), with the result of distorting information. To remedy the distortion we ‘trimmed’ the mean GGP-H by removing 3% of the households at either extreme of the distribution of households’ gaps. Contrary to the mean, the median statistics is robust with respect to outliers and does not change whether we trim it or not.\(^6^8\)

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68 The Gender Gap in Pension, our headline indicator, takes the ratio between two mean pension amounts (a mean difference at the numerator and the mean value for men at the denominator). In contrast, the mean intra-household gender gap in pension takes the average of a distribution of ratios, each ratio representing the gap in a given household. Such distribution is ‘right censored’ at 1 (the woman cannot draw less than zero pension and with zero pension the gap is 1, i.e. 100%) and skewed to the left with negative values theoretically unbounded. For example if the wife receives 500 and the husband receives 100 the gap is -4 (i.e. -400%). This skewness is the source of the distortion and calls for trimming. Symmetric trimming limits the arbitrariness entailed by any correction.

The median of a distribution of ratios (the household gaps) is not unduly affected by outliers as it counts the number of households rather than the value of each household’s gap. Not only, therefore, is trimming not
C. Expectations

We may expect the intra-household gap to differ from the aggregate gap in response to interactions among four set of factors - sample selection, assortative mating, income role specialization, and the institutional design of the pension system. The term sample selection alludes to the consequences of confining analysis to elderly couples, to the exclusion of the widows, the never married and the divorced. Since women in the excluded groups tend to have higher pensions (see step 11) we may expect the selection effect to drive the intra-household gap upward. ‘Assortative mating’ implies similarity between spouses, a widely studied social phenomenon (Vandenberg, 1972). This phenomenon concerns the choice of spouse: women graduate tend to meet and marry men graduate. Each scientific discipline uses the term somewhat idiosyncratically, and economists stress education, attitudes, and productivity as key components of similarity.

When people marry, however, an opposite effect is triggered by income role specialization, the tendency for men to ‘specialize’ in market work and for women to ‘specialize’ in child rearing and housework. Having married, though, some women might decide to drop out of paid employment (especially common among older cohorts), leading to a high pension gap. If they carry on working, on the other hand, they are likely to have higher pensions, implying a smaller gap. The rationale for such specialization is disputed within economics as well as outside the discipline (see Becker 1981 for one of the earliest views and the critique by Bergmann 1995). The extent of specialization is much weaker now than in the past, but still exists and introduces a North-South gradient in behaviour. Yet, marriage is still strongly associated with higher pension gaps (step 11) indicating that income role specialization tends to prevail over assortative mating. If this evidence is combined with the expectations of a gap-augmenting selection effect, we should find larger within-households gaps. Superimposed to these three effects, however, institutional factors may push the gap in either direction. For example the gap may be compressed by providing generous old-age benefits unrelated to labour market behaviour. This way, each country is really a case on its own, while we may also expect to find differentiation between cohorts and between North, South and Eastern Europe.

D. First results

Figures 12.1 to 12.4 display the intra-household coverage rate gap, the median and the mean intra-household pensioners’ gap (both trimmed and untrimmed). In order to facilitate comparisons with earlier work, the ordering of country is that of the headline, aggregate indicator, the pensioners’ gap in average income.

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required, but, by construction, the median does not change with symmetric trimming because the same share of households is removed on either side.
Within elderly couples households, the coverage rate gap is relatively high, in fact higher than at aggregate level (13% in Figure 12.1 for EU27 compared to 6% in Figure 2.1). The highest gap countries are the same we found at aggregate level, namely Austria, Belgium, Greece, Ireland, Malta and Spain, all of which record intra-household coverage rate gaps higher than 25%. In most of these countries high coverage rates are driven by the fact that relatively few women belonging to earlier cohorts were in paid work.

**Figure 12.1:** Coverage Rate Gap among elderly couples (aged 65+) with at least one pension recipient

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**For the ‘middle’ elderly couple, the intra-household gap is high** in absolute terms and higher than its GGP equivalent (46% in the EU27 compared to the 42% of Figure 1.3). In fact the intra-household median gap dominates the aggregate gender gap in median pension in all the countries except in Estonia, Greece, Ireland, Latvia, Romania and Slovenia. It is also more dispersed, with the lowest gap country (Estonia) boasting absolute equality (zero gap) while Germany records slightly over 64% and Luxembourg an astounding 90%. Eastern and Nordic countries tend to have the smallest intra-household gap, some continental countries like Luxemburg, France and Germany the highest, but this is also broadly true for the aggregate gap.

**Figure 12.2:** Intra-Household Median Gap in Pension for elderly couples (aged 65+), both pensioners

---

69 Luxembourg reports an astoundingly high figure, but caution must be exercised because of the sample size.
For the **average elderly couple** in the EU27 the intra-household gap is higher than its aggregate equivalent but only if the mean is trimmed (42% in Figure 12.3 against 39% in Figure 1.1). Trimming consistently increases the gap across countries\(^70\), with the sole exception of Slovakia where there is no change (Figure 12.4). The size of the increase varies from hardly 1 percentage point in Estonia to almost 25 points in France.

**Figure 12.3:** Intra-Household Mean Gap in Pension for elderly couples (persons aged 65+), both pensioners (Trimmed mean)

**Figure 12.4:** Intra-Household Mean Gap in Pension for elderly couples (persons aged 65+), both pensioners (Untrimmed mean)

\[ \text{Intra-household, Gender Pensioners' Gap} \% , \text{ trimmed mean} \]

\[ \text{Intra-household, Gender Pensioners' Gap} \% , \text{ mean} \]

\[ \text{E. Discussion} \]

If we take the median and the trimmed mean gaps as the most robust measures at the intra-household level, the evidence is fairly consistently in favour of higher within-household gaps, which is broadly consistent with expectations. There are some exceptions, depending on the indicator, and they are mainly found among Eastern countries.

\[ \text{70 The reason for this is that we are excluding cases where the wife’s pension is many times larger than the husband’s, e.g., if the husband is still working.} \]
A fine grained analysis is needed to discriminate among the four effects that might account for discrepancies between the aggregate and the intra-household level. Although such an endeavour is outside the scope of this report, it is relatively straightforward to provide some evidence of how much one of the effects weighs, specifically the sample selection effect. This is done in Figure 12.5 where the aggregate, median gap is compared for two samples, respectively all the pensioners older than 65 years (the sample used for the rest of the report) and all the pensioners older than 65 living in couple households (the sample used in this section). Among the latter the (aggregate) gap rises by nearly 12 points in EU27 and by various amounts in the different countries, and falls in three countries (GR, IE, SI). In other words, excluding single and widowed individuals accounts for an increase of more than one quarter in the original gap.

**Figure 12.5:** Gender Gap in median pension income for pensioners aged 65+ years (the effect of selecting couple households)

![Gender Gap in median pension income for pensioners aged 65+ years](image)

Note: the bars reproduce Figure 1.3

### 2.13 STEP 13: Putting a complex mosaic together: Decomposition analysis

This investigation has proceeded by means of a series of linked steps, factor by factor. These exercises have shown beyond doubt that gender gaps in pension are a very significant part of life for older European citizens. Gender gaps in pension of the size located in many member states could mar individual lives; if these gaps grow further in the future, they might constitute an important obstacle to any policy of gender balance or social inclusion. The picture uncovered was also very complex: gender gaps vary with education, but they also vary with aspects such as age, level of income, broken careers or marital status. These factors could plausibly explain some of the observed phenomena. However, in the typical case, they are also highly related among themselves. We see, for instance gender gaps varying by
marriage status and labour market career, but we cannot tell which of those two factors is doing more of the explanation.\textsuperscript{71}

**A. Motivation**

The factor by factor approach was motivated by the assumption that differences between men and women in these characteristics mediated by the effects of pension systems acting as ‘filters’, are driving the gap.

While simple, and intuitive, a factor by factor analysis may yield a fragmented picture and may even be inaccurate because the different factors often reinforce or offset one another. If a person is highly educated she is likely to have been more years in employment, hence separate analysis of the impact of education may be ‘picking up’ also part of the effect imparted by years in employment (and conversely). Factor by factor analysis can describe the data, i.e. of what we observe. This description can be adequate for designing palliative interventions to ‘cure’ the effects of a particular issue.

However, for certain policy interventions we need to go beyond analysis of each factor taken separately and allow for interaction between factors by a multivariate analysis. A well known approach is to build a counterfactual gap that simultaneously removes the effect of gender differences in education, marriage status, cohort, labour market career and so on, and to compare this counterfactual with the actual gap. So called decomposition analysis has been used to this purpose in labour economics, and has been widely applied in the analysis of pay gaps. We may in fact denote the proposed counterfactual ‘adjusted gender gap in pension’ in close analogy to the concept of ‘adjusted gender pay gap’.

Let’s take this analogy a step further. Women may be low paid in the labour market because, say, they have lower experience or because they receive a lower salary for each year of experience. In the literature the first possibility is often referred to as ‘explained component’ of the wage gap’ and the second as ‘unexplained component’. This hints to the fact that gender pay disparities may be more easily tracked to and justified by higher experience on the part of men whereas further analysis is needed to explain why men should also be rewarded more for each year of experience.

In the same fashion, women may receive lower pension income because they spent fewer years in the labour force (explained component) or because they receive less pension income per year spent in the labour force effect on account of low pay or other reasons to be investigated (unexplained component). An adjusted or unexplained gender gap in pension computes the gap that would result if the relevant explained components were simultaneously removed. It compares women and men with the same

\textsuperscript{71} They might even be ‘explaining’ matters because they are related to other unobserved influences – cases of spurious correlation.
characteristics without ruling out the possibility that the characteristics may be rewarded differently. Individual characteristics are not confined to personal attributes. For example, the pillar composition of one’s pensions can be treated as a characteristic.

**B. Literature review**

In the field of pay the Blinder-Oaxaca decomposition approach (named after Blinder 1973 and Oaxaca 1973 who introduced it) seeks to decompose the gender gap in wages by asking this kind of counterfactual questions. Well‐ known applications of Blinder-Oaxaca type methods in the field of pay gaps have been surveyed recently by Jann (2008) and Fortin et al (2011) who also assess the econometric techniques that have been developed to deal with many technical issues.

However, there are very few applications of decomposition methods in the field of pensions. A notable recent exception is Even and Macpherson (2004) for the US, while Lyberaki, Tinios and Georgiadis (2012) look at the allied issue of old age personal incomes using SHARE data. The key difference between analyzing pay gaps and pension gaps arises from the special circumstances of pensions. Pay arises in a market and wage rates are outcomes of market processes. Pensions are four times removed from this, in the sense that four processes ‘filter’ market outcomes: pay is transformed into *annual earnings*; annual earnings enter into *career (lifetime) earnings* through the length of career; finally the pension system transforms career earnings into *pension entitlements*.

What we see in the results is the total and cumulative effect of all four processes; special importance may be accorded to the operation of the pension system and social policy which may act to correct (in most cases) and in other cases, (pathological possibly magnify imbalances). This implies that we must be very careful with the interpretation of decomposition results – most of the interpretations of the pay decompositions must be adapted. So, at this stage of the analysis, the results are indicative, they should be used to nuance the factor-by-factor analysis and should be used to chart future work.

**C. First Results**

At this very preliminary stage of investigation the rationale for computing an adjusted GGP is straightforward: the idea is to compare likes for women with likes for men and to derive a measure of gender differences that cannot be easily explained away with clearly observable gender differences. We will also be able to gauge the combined effect of these observable differences by simple comparison of the adjusted and the unadjusted gap.

We adopt the Neumark (1988) variant of the Blinder-Oaxaca methodology to ‘adjust’ the gap for the following characteristics:

- being married (as opposed to being single)
• being divorced (as opposed to being single)
• being widow (as opposed to being single)
• being low, medium or highly educated
• having x years in paid employment
• being older than 80 years of age
• having a x share of the third pillar in own pension income

2010 SILC data are used for nine of the eleven countries we have chosen for deeper investigation in this report – Austria, Germany, Estonia, France, Greece, Italy, the Netherlands, Poland and the UK (see Chapter 3). Sweden and Denmark have not been included because they do not record years in employment, which is an important determinant of pension income. The results are displayed in Figure 13.1 where the adjusted gap is reported in percentage of the unadjusted value for the country. The methodological details can be found in Appendix 3.

Two caveats deserve mention. First is what is known in the literature as selection issue. Years spent in paid work are recorded only for those who have ever worked, leaving out of the analysis the segment of men and women who never participated in the labour market.\textsuperscript{72} Thus the average gap which is computed is close to the headline indicator for the country but the two gaps do not coincide because not all the pensioners (over 65) have been in paid employment. Because of the non-negligible differences that exist between women ever and never in paid work the results we obtain for the adjusted gap may not, therefore be extended to all the pensioners or all the elderly (for men the problem is negligible as there are very few who never worked). Ideally, the fact that those not covered by the pension system, or who have never worked for pay, are not a random group must be taken on board. The second caveat concerns the set of characteristics included in the estimation of the adjusted gap. We stick here to those we have chosen for our earlier factor by factor analysis. This decomposition analysis is thus a kind of complement to the preceding work. However, choosing a different set could alter the results. With this caveats in mind, the findings are ‘plausible’ although not entirely expected.

\textsuperscript{72} Participation in the labour market is what is known as a ‘discrete choice’, implying that it is a qualitative issue, and not simply equivalent to choosing x rather than x+1 years. In practical terms, we do not know what those women would done in the labour marker, had they decided to enter. All we know is that they did not enter.
The key finding is that netting out differences in observed characteristics between men and women (who were ever in employment) has a modest impact on the average GGP in most but not all the cases. In six countries the adjustment ranges from -15% to +11% (UK, the Netherlands, Austria, Greece, Italy and Poland). In Germany and France the adjustment reaches around -30% while in Estonia it more than cancels out the original gap resulting in a (minimal) gap in favour of men. Unlike France and Germany, however, Estonia has a very low gap to start with (around 4%). We find high gap countries among those where the gap decreases (Germany, France) but also where it increases (the UK: recall that the countries are listed in decreasing order of the headline GGP). Hence adjusting the gap is not likely to substantially lessen the dispersion of GGP values across countries. There is also no obvious divide in our results between high and low employment countries: the adjusted gap increases in a low female employment country like Italy but decreases in Greece.

One basic reason why no clear pattern emerges is a complex interaction between factors that weigh differently from country to country although, individually, they pull in the same direction across countries. This is shown by Table 13.1 that renders visually the impact of each characteristic on the original (unadjusted) country’s gap. The countries are listed by row, the characteristics by column and each cell of the resulting matrix is shaded white, grey or blue. White stands for no discernible (statistically significant) impact, grey for an augmenting effect and blue for a decreasing effect.

Note: see Appendix 3 for details
Source: our calculations on EU-SILC 2010 data

**Figure 13.1:** The adjusted gap as a percentage of the original gap for each country
Table 13.1: The impact of gender differences in characteristics on the GGP (unadjusted)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Germany</th>
<th>UK</th>
<th>Netherl.</th>
<th>France</th>
<th>Greece</th>
<th>Austria</th>
<th>Italy</th>
<th>Poland</th>
<th>Estonia</th>
</tr>
</thead>
<tbody>
<tr>
<td>being never-married</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>being married</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>being divorced/separated</td>
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<td></td>
<td></td>
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<tr>
<td>being widow</td>
<td></td>
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<td>being highly educated</td>
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<td>years in employment</td>
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<td>being older than 80</td>
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<td>share of pillar3</td>
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</tbody>
</table>

Legend: White: the impact is not statistically significant
Grey: the impact is statistically significant and increases the gap
Blue: the impact of the variable is statistically significant and decreases the gap
Note: see Appendix 3 for details
Source: our calculations on EU-SILC 2010 data

Differences between men and women in the prevalence of marriage and widowhood as well as in age tend to lessen the gap across countries, with marriage and widowhood exerting the strongest and more consistent effect. The results for widowhood are straightforward as there are far more widows among women and they often receive survivor’s pensions. That for marriage warrants an explanation. Being married is generally associated with higher pension for men and lower for women, but the depressing effect for the latter is stronger than the augmenting effect for the former. As there are more men than women in the reference population the net result is a lower gap. Divorce or separation have a discernible and augmenting effect on the gap only in Germany. Lack of a discernible effect in the remaining countries might be due to be the low numbers of divorcees.

Differences in the level of education tend to augment the gap at both ends. At the low end of the educational spectrum women outnumber men in the sample used for estimation (recall the sample only includes people who ever worked and are entitled to a pension); at the high end the opposite holds. In both cases this translates into a disadvantage for women, and longer years in employment among men add to this disadvantage. As concerns the effect of pension pillars, SILC data separates out pillar 3 while bunching the first two pillars. However, the beneficiaries of pillar 3 pension schemes are less than 100 in our dataset for all the 9 countries except Germany and the UK. In Greece pillar 3 pensions are so few that the variable was dropped from the analysis and in Poland pillar 3 is not separately recorded. The two mature pillar 3 countries give the clear indication that participation in pillar 3 schemes tends to increase the gap because it is less frequent among women but yields relatively generous pensions.

Summing up, the combined differences in the distribution of men and women by age, marriage status, education, employment career and participation in pillar 3 schemes have a modest impact on the GGP in
most cases – lower than 15%. Three exceptions are worth noting: Germany and France where the share of the gap accounted for rises to around 30% and Estonia where the entire (very small) gap is accounted for. Although the same characteristics tend to pull the gap in the same direction across countries, the combined effect differs from country to country because of the complexity of interactions, and it may augment or decrease the gap. This leaves a sizeable GGP that warrants explanation in the majority of the countries we considered: if we except Estonia the adjusted or unexplained gap ranges from 111 to 70 percent of the original (unadjusted) gap. The challenge is to know why women similar to men as concerns education, family status, working career and even propensity to invest in pillar 3 pension schemes are ‘treated’ differently by pension systems. Is it because of personal characteristics that we were not able to include in this analysis – e.g. motherhood status or attitudes towards financial risk - or because of the way the labour market and the pension systems operate in the different countries?

Having resorted to SILC data the analysis was necessarily limited to the characteristics reported by this source. Investigating pension entitlements necessitates possessing information about events that took place a long time ago – such as changes of job, number of children ever born etc. SILC has information about respondents’ current status, which in the case of pensions may frequently be irrelevant. Moreover, SILC is rich in personal details but poor in legal and administrative details, and the latter are likely to play the lion’s share in explaining pensions. While SILC remains the best source for calculating the gaps it has limitation for the analysis of what determines the gaps.73

CHAPTER 3: SOME LESSONS FROM COUNTRY EXPERIENCE

The analysis to this point has relied on performing a number of statistical exercises ‘horizontally’ across the 27 member states and for the EU average. A different and complementary kind of understanding can be gleaned by examining specific countries in some depth and commenting on important features. Ten national experts were asked to answer a questionnaire relating to features of the data in their country, as well as on institutional details that may shed explanatory light to findings that might otherwise appear opaque. The respective countries are Austria, Denmark, Estonia, France, Greece, Italy, the Netherlands, Poland, Sweden and the UK. For Germany we relied on a recent study by the Federal Ministry.

73 Using SHARE would allow a richer description of the process.
3.1 STEP 14: A comparison of EU-SILC and administrative data

A network of experts from the countries enumerated above were asked to investigate the possibility of replicating gender gaps using definitions as close as possible to EU-SILC, in order to derive an impression of the kind of differences that may be expected.

A number of issues hinder comparisons in some countries:

- In Austria administrative data do not include civil servants.
- A number of social insurance-based systems rely on a separate institutes to collect information from pension providers every four years or so; one of their chief duties is to match pensions to individuals, using some kind of unique social security number (France, Sweden). The production of reliable person-level data is an important governance tool whose importance cannot be overestimated.
- However in the Netherlands it is still not possible to match 1st and 2nd pillar incomes in order to arrive at a single pension average. In Denmark it is possible to match 2nd and 3rd pillars with each other but not with the 1st. Similar problems are caused by the UK by the existence of large numbers of providers, but also of system fragmentation.
- Even in those cases where data exist and cross-tabulation can be produced, the dissemination of the data and production of indicators such as gender gaps is very limited.
- In some systems (e.g. Denmark) everything works on an individual basis. Other systems (Austria, Italy) rely on derived rights.
- A number of systems exhibit a pervasive ‘layering’ of reforms of different generations, so that different people may be subject to different rules. This appears to be especially an issue in the UK, but was also mentioned in Estonia, Austria and Italy.

Table 14.1 compares administrative and EU-SILC data for equivalent definitions. Where the two sources can be matched (Estonia, Italy), the correspondence is very close; the same holds for France and Austria where correspondence was only possible for the headline gap. It is notable that differences are greater in the older age group. However, in the other two multi-pillar systems (UK, Netherlands) matching of data was very imperfect.
### Table 14.1: Cross-checking administrative data

<table>
<thead>
<tr>
<th>Country</th>
<th>65+</th>
<th>65-80</th>
<th>80+</th>
<th>65+</th>
<th>65-80</th>
<th>80+</th>
<th>65+</th>
<th>65+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td>29,7</td>
<td>35,2</td>
<td>17,2</td>
<td>30,9</td>
<td>35,2</td>
<td>20,3</td>
<td>-9,8</td>
<td>-8,1</td>
</tr>
<tr>
<td>Estonia</td>
<td>3,4</td>
<td>2,2</td>
<td>8,5</td>
<td>4,4</td>
<td>3,1</td>
<td>9,5</td>
<td>-3,3</td>
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</tr>
<tr>
<td>Denmark</td>
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<td>23,1</td>
<td>9,5</td>
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<td>18,8</td>
<td>17,2</td>
<td>0,5</td>
<td>-0,1</td>
</tr>
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<td>Sweden</td>
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<td>...</td>
<td>...</td>
<td>32,5</td>
<td>33,9</td>
<td>25,7</td>
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<td>0,0</td>
</tr>
<tr>
<td>Austria</td>
<td>31,9</td>
<td>...</td>
<td>...</td>
<td>33,8</td>
<td>37,4</td>
<td>25,6</td>
<td>...</td>
<td>-12,3</td>
</tr>
<tr>
<td>France</td>
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<td>38,5</td>
<td>39,3</td>
<td>37,3</td>
<td>33,8</td>
<td>25,6</td>
<td>...</td>
<td>-2,7</td>
</tr>
<tr>
<td>Netherlands</td>
<td>50,9^2</td>
<td>...</td>
<td>40,1</td>
<td>40,4</td>
<td>44,5</td>
<td>26,6</td>
<td>...</td>
<td>0,0</td>
</tr>
<tr>
<td>UK</td>
<td>25,0^2</td>
<td>...</td>
<td>...</td>
<td>42,8</td>
<td>44,9</td>
<td>37,4</td>
<td>...</td>
<td>-0,1</td>
</tr>
<tr>
<td>Poland</td>
<td>30,5^2</td>
<td>...</td>
<td>...</td>
<td>22,9</td>
<td>22,8</td>
<td>24,7</td>
<td>...</td>
<td>-0,7</td>
</tr>
</tbody>
</table>

**Source:** Administrative data obtained by the ENEGE group of experts from publically available data.

**Notes:**
1. in Netherlands the reported Gender Gap in Pension refers to pillars 2 & 3.
2. in the UK the reported Gender Gap in Pension refers to pillar 1 and the data are not disaggregated by age.
3. Cover only ZUS system (excludes farmers); all pensioners regards.

### Figure 14.1: Administrative data vis-à-vis EU-SILC data: a comparison of the Gender Gap in Pension

Table 14.4 was compiled with the help of experts; it shows that national systems differ according to the data they produce and the conventions used. The table also brings out that systems differ according to how far they are based on individual rights and the treatment given to derived rights, such as survivors pension or the treatment of social insurance entitlements upon divorced.

The overall impression is one of heterogeneity. Administrative data obviously and by definition describe the operation of a pension system in a way that cannot be improved; yet their use can be misleading when the object is to understand differences in national experience. Especially worrying is the low visibility of the data. Even in those countries where the data exist, computing gender gaps that would be meaningfully comparable to other countries was a non-trivial issue.
A. Benchmarking the eight country studies

Table 14.2 benchmarks the eight countries corresponding to the country studies by compiling for 2009 structural indicators and social protection macroeconomic magnitudes (ESSPROS data). Table 14.3 further collates information derived in the course of this report for the same countries.

The two tables together show that the eight countries between them encompass the range of European experience, both in terms of the role of pensions in social protection, types of pension systems and pension gender gap experience.

Table 14.2: Benchmarking the eight country study: Structural and social protection indicators, 2009

<table>
<thead>
<tr>
<th>Indicators</th>
<th>DK</th>
<th>SE</th>
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<th>PL</th>
<th>NL</th>
<th>AT</th>
<th>IT</th>
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<tr>
<td>% At risk of poverty:</td>
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<td></td>
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<td></td>
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<tr>
<td>National</td>
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<td>13.3</td>
<td>17.6</td>
<td>10.3</td>
<td>12.1</td>
<td>18.2</td>
<td>17.1</td>
<td>20.1</td>
</tr>
<tr>
<td>% At risk of poverty rate:</td>
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<td></td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>Total 65+</td>
<td>17.7</td>
<td>15.5</td>
<td>10.6</td>
<td>14.2</td>
<td>5.9</td>
<td>15.2</td>
<td>16.6</td>
<td>21.4</td>
<td>21.3</td>
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<tr>
<td>Males 65+</td>
<td>16.8</td>
<td>7.8</td>
<td>8.7</td>
<td>9.9</td>
<td>5.5</td>
<td>10.4</td>
<td>12.6</td>
<td>17.6</td>
<td>18.8</td>
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<tr>
<td>Females 65+</td>
<td>18.5</td>
<td>21.6</td>
<td>12.0</td>
<td>16.8</td>
<td>6.3</td>
<td>18.7</td>
<td>19.5</td>
<td>24.5</td>
<td>23.3</td>
</tr>
<tr>
<td>Total 75+</td>
<td>24.9</td>
<td>23.5</td>
<td>13.2</td>
<td>12.4</td>
<td>7.1</td>
<td>17.9</td>
<td>18.5</td>
<td>25.5</td>
<td>25.5</td>
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<tr>
<td>Males 75+</td>
<td>25.0</td>
<td>11.0</td>
<td>10.7</td>
<td>7.0</td>
<td>7.1</td>
<td>13.6</td>
<td>13.5</td>
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<td>Females 75+</td>
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<td>31.5</td>
<td>14.9</td>
<td>15.1</td>
<td>7.1</td>
<td>20.5</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total 65+</td>
<td>11.7</td>
<td>10.7</td>
<td>14.0</td>
<td>16.1</td>
<td>10.2</td>
<td>15.5</td>
<td>16.2</td>
<td>19.2</td>
<td>14.6</td>
</tr>
<tr>
<td>Males 65+</td>
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<td>10.0</td>
<td>14.3</td>
<td>16.1</td>
<td>10.2</td>
<td>15.3</td>
<td>16.0</td>
<td>18.3</td>
<td>14.2</td>
</tr>
<tr>
<td>Females 65+</td>
<td>11.4</td>
<td>10.8</td>
<td>13.4</td>
<td>16.2</td>
<td>10.5</td>
<td>15.5</td>
<td>16.2</td>
<td>19.5</td>
<td>15.8</td>
</tr>
<tr>
<td>Total 75+</td>
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<td>10.9</td>
<td>12.2</td>
<td>14.6</td>
<td>11.7</td>
<td>15.1</td>
<td>14.6</td>
<td>19.6</td>
<td>14.6</td>
</tr>
<tr>
<td>Males 75+</td>
<td>12.0</td>
<td>9.9</td>
<td>12.6</td>
<td>16.1</td>
<td>9.0</td>
<td>16.7</td>
<td>13.0</td>
<td>18.5</td>
<td>14.2</td>
</tr>
<tr>
<td>Females 75+</td>
<td>12.0</td>
<td>11.5</td>
<td>12.2</td>
<td>14.1</td>
<td>31.4</td>
<td>15.1</td>
<td>14.9</td>
<td>19.7</td>
<td>15.0</td>
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<td><strong>Social Protection expenditure (% GDP, ESSPROS)</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Pensions</td>
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<td>12.9</td>
<td>14.5</td>
<td>12.4</td>
<td>12.8</td>
<td>15.1</td>
<td>16.0</td>
<td>12.5</td>
<td>13.4</td>
</tr>
<tr>
<td>Old age protection</td>
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<td>11.7</td>
<td>6.9</td>
<td>9.0</td>
<td>10.5</td>
<td>12.5</td>
<td>10.2</td>
<td>7.6</td>
</tr>
<tr>
<td>Survivors’ pension</td>
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<td>1.7</td>
<td>1.2</td>
<td>2.0</td>
<td>2.6</td>
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<td>2.2</td>
</tr>
<tr>
<td>Means tested</td>
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<td>:</td>
<td>0.8</td>
<td>:</td>
<td>0.1</td>
<td>0.4</td>
<td>0.5</td>
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<tr>
<td>Pensions as % of total Social protection expenditure</td>
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<td>41.0</td>
<td>45.9</td>
<td>63.9</td>
<td>43.2</td>
<td>50.4</td>
<td>56.4</td>
<td>44.5</td>
<td>49.3</td>
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</table>
Table 14.3: Collecting findings for the eight country cases

<table>
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<th>PL</th>
<th>NL</th>
<th>AT</th>
<th>IT</th>
<th>UK</th>
<th>GR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women’s mean pension as (%) of GDP per capita</td>
<td>49.7</td>
<td>48.4</td>
<td>49.5</td>
<td>46.0</td>
<td>45.7</td>
<td>55.8</td>
<td>51.5</td>
<td>40.4</td>
<td>39.1</td>
</tr>
<tr>
<td>Women’s mean pension as (%) of national poverty line</td>
<td>130.9</td>
<td>128.8</td>
<td>120.1</td>
<td>141.1</td>
<td>130.4</td>
<td>148.9</td>
<td>135.8</td>
<td>100.3</td>
<td>111.6</td>
</tr>
<tr>
<td>Women’s median pension as (%) of GDP per capita</td>
<td>45.3</td>
<td>45.1</td>
<td>45.5</td>
<td>42.5</td>
<td>38.0</td>
<td>48.1</td>
<td>43.1</td>
<td>34.7</td>
<td>32.1</td>
</tr>
<tr>
<td>Women’s median pension as (%) of national poverty line</td>
<td>119.3</td>
<td>120.1</td>
<td>110.4</td>
<td>130.1</td>
<td>108.2</td>
<td>128.4</td>
<td>113.6</td>
<td>86.3</td>
<td>91.7</td>
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<td>Gender Gap in Pension (%)</td>
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<td>32.5</td>
<td>38.5</td>
<td>22.9</td>
<td>40.4</td>
<td>33.8</td>
<td>30.9</td>
<td>42.8</td>
<td>35.6</td>
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<td>Indexed Gender Gap in Pension (EU-27=100)</td>
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<td>83.9</td>
<td>99.4</td>
<td>59.0</td>
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<td>79.7</td>
<td>110.5</td>
<td>91.9</td>
</tr>
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<td>Gender Pay Gap (in unadjusted form)</td>
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<td>15.8</td>
<td>16.0</td>
<td>5.3</td>
<td>18.5</td>
<td>25.5</td>
<td>5.5</td>
<td>19.5</td>
<td>22.0</td>
</tr>
<tr>
<td>Gender Gap in Coverage by the pension system (M – F)</td>
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<td>-2.7</td>
<td>-0.7</td>
<td>0.0</td>
<td>-12.3</td>
<td>-8.1</td>
<td>-0.1</td>
<td>-13.3</td>
</tr>
<tr>
<td>The Gender Gap in Pension among the elderly</td>
<td>18.9</td>
<td>32.5</td>
<td>40.2</td>
<td>23.5</td>
<td>40.4</td>
<td>42.0</td>
<td>36.5</td>
<td>42.9</td>
<td>44.5</td>
</tr>
<tr>
<td>Gender Gap in Pension by cohort and marital status</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Persons aged 65-80</td>
<td>18.8</td>
<td>33.9</td>
<td>39.3</td>
<td>22.8</td>
<td>44.5</td>
<td>37.4</td>
<td>35.2</td>
<td>44.9</td>
<td>38.3</td>
</tr>
<tr>
<td>Persons aged 80+</td>
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<td>32.5</td>
<td>38.5</td>
<td>22.8</td>
<td>40.4</td>
<td>33.8</td>
<td>30.9</td>
<td>42.8</td>
<td>35.8</td>
</tr>
<tr>
<td>Non-widowed persons aged 65-80</td>
<td>24.1</td>
<td>36.2</td>
<td>46.9</td>
<td>29.9</td>
<td>53.8</td>
<td>48.6</td>
<td>43.9</td>
<td>54.8</td>
<td>40.6</td>
</tr>
<tr>
<td>Non-widowed persons aged 80+</td>
<td>28.3</td>
<td>34.8</td>
<td>51.9</td>
<td>26.9</td>
<td>51.0</td>
<td>38.0</td>
<td>36.9</td>
<td>48.8</td>
<td>32.2</td>
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<tr>
<td>Persons aged 50-64: Gender Gap in Pension</td>
<td>24.1</td>
<td>36.2</td>
<td>46.9</td>
<td>29.9</td>
<td>53.8</td>
<td>48.6</td>
<td>43.9</td>
<td>54.8</td>
<td>40.6</td>
</tr>
<tr>
<td>Persons aged 50-64: Gender Gap in Coverage (M – F)</td>
<td>24.1</td>
<td>36.2</td>
<td>46.9</td>
<td>29.9</td>
<td>53.8</td>
<td>48.6</td>
<td>43.9</td>
<td>54.8</td>
<td>40.6</td>
</tr>
<tr>
<td>Gender Gap in Pension by educational level (shape primary-tertiary)</td>
<td></td>
<td></td>
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<tr>
<td>Distribution: Number of poor women for poor man</td>
<td>U shape</td>
<td>Rising</td>
<td>Flat</td>
<td>Flat</td>
<td>Rising for tertiary</td>
<td>Falling</td>
<td>Flat</td>
<td>Rising</td>
<td>Rising</td>
</tr>
<tr>
<td>Relative interquartile range (men=100)</td>
<td>51.7</td>
<td>80.4</td>
<td>76.5</td>
<td>73.9</td>
<td>49.9</td>
<td>89.0</td>
<td>72.9</td>
<td>65.7</td>
<td>44.4</td>
</tr>
<tr>
<td>Trends in the Gender Gap in Pension over time: Difference between 2010 and 2005 in pp</td>
<td>6.4</td>
<td>1.7</td>
<td>3.7</td>
<td>-0.9</td>
<td>2.8</td>
<td>-1.9</td>
<td>-4.4</td>
<td>2.8</td>
<td>-0.3</td>
</tr>
<tr>
<td>Broken careers % 0-10</td>
<td>28.6</td>
<td>11.3</td>
<td>20.7</td>
<td>29.5</td>
<td>14.3</td>
<td>26.0</td>
<td></td>
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<tr>
<td>Analysis based on SHARE data: Gender Gap by Pillar</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Gender Gap in Pension: Pillar 1</td>
<td>-3.5</td>
<td>14.4</td>
<td>32.5</td>
<td>23.2</td>
<td>-3.1</td>
<td>30.5</td>
<td>35.7</td>
<td>29.9</td>
<td></td>
</tr>
<tr>
<td>Gender Gap in Pension: Pillar 1+2</td>
<td>9.2</td>
<td>15.1</td>
<td>32.9</td>
<td>23.2</td>
<td>23.1</td>
<td>29.4</td>
<td>35.2</td>
<td>30.5</td>
<td></td>
</tr>
<tr>
<td>Gender Gap in Coverage by Pillar 2 coverage (M – F)</td>
<td>7.0</td>
<td>-4.3</td>
<td>-3.1</td>
<td>0.0</td>
<td>28.4</td>
<td>6.1</td>
<td>2.7</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>Gender Gap in Pension by Number of children</td>
<td>None</td>
<td>4.3</td>
<td>15.9</td>
<td>19.0</td>
<td>38.7</td>
<td>-6.5</td>
<td>25.7</td>
<td>16.9</td>
<td>25.9</td>
</tr>
<tr>
<td>1-2</td>
<td>5.0</td>
<td>23.0</td>
<td>30.7</td>
<td>30.0</td>
<td>32.4</td>
<td>19.2</td>
<td>34.2</td>
<td>29.2</td>
<td></td>
</tr>
<tr>
<td>&gt;2</td>
<td>16.3</td>
<td>26.7</td>
<td>50.2</td>
<td>34.5</td>
<td>29.6</td>
<td>40.3</td>
<td>42.7</td>
<td>35.4</td>
<td></td>
</tr>
<tr>
<td><strong>Table 14.4:</strong> The portrait of the national systems</td>
<td><strong>Existence of publically available administrative data by gender</strong></td>
<td><strong>Entitlements of those who have never worked (e.g. separate age pension)</strong></td>
<td><strong>Supplements on behalf of non-working spouse</strong></td>
<td><strong>Divorce treatment</strong></td>
<td></td>
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<tr>
<td><strong>Denmark</strong></td>
<td>possible to disaggregate by Pillar1 and Pillar2+3, Statistics Denmark publishes system-wide data</td>
<td>OAP pension at 65. Full for residence period of 40 years</td>
<td>No</td>
<td>Until 2007 only lump sum pensions were divided; since 2007 no pensions are divided</td>
<td></td>
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</tr>
<tr>
<td><strong>Sweden</strong></td>
<td>The Swedish Pension Agency covers the 1st pillar Statistics Sweden publishes system-wide data</td>
<td>Guarantee pension at age 65. Spouse eligible to guarantee pension (at lower rate)</td>
<td>Pension rights are individual rights</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>France</strong></td>
<td>Based on annual survey of all funds. Every 4 years detailed data from inter-pension fund survey.</td>
<td>Though system contributory, if have no pension rights, are entitled to minimum pension 65+</td>
<td>Supplement abolished 2011. Some supplementary and pillar 3 pensions have them</td>
<td>No rights for divorcees</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Poland</strong></td>
<td>Only for ZUS Not for Farmers’ system. (data not aggregated)</td>
<td>No (only social assistance). To some extent, the family pensions are a way to obtain a pension benefit for a non-working spouse if she/he is 45+.</td>
<td>None</td>
<td>None for current pensioners In new DC system: 2nd pillar capital divided</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Netherlands</strong></td>
<td>Data for 1st pillar provided by the SVB 2nd pillar consists of 651 funds; Data collected but not published Gender gap not published</td>
<td>1st pillar (AOW) is flat rate; all are entitled to it at 65. Different rates by family situation</td>
<td>None</td>
<td>Partners are entitled to 50% of old age pension accrued during marriage or partnership. Applicable unless explicitly ruled out by agreement If an ex-partner dies, the survivor draws full pension</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Austria</strong></td>
<td>Data provided by Federation of Austrian Social Insurance Institutions Civil servants excluded 2nd pillar very small</td>
<td>Means tested Equalisation supplement to low pensions. In practice if the husband has a pension, only widows can draw it,</td>
<td>No supplement; however, equalization may apply.</td>
<td>Right depends on guilty verdict for divorce; if amicably dissolved, no division</td>
<td></td>
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</tr>
<tr>
<td><strong>Italy</strong></td>
<td>Istat publishes data, converting pensions into dependants; some inaccuracies</td>
<td>Means tested age pension at 65; not separately identified</td>
<td>Supplements for dependants</td>
<td>Survivor’s pension granted, with conditions to divorced ex-spouse</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>UK</strong></td>
<td>Department of Work and Pensions publishes data for different 1st pillar schemes; separated by pillar. Aggregation over pillars difficult.</td>
<td>May qualify for Flat rate Basic state Pension based on spouse’s contributions Pension Credit may top up</td>
<td>No</td>
<td>Courts decide one of three ways of financial settlements</td>
<td></td>
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</tr>
<tr>
<td><strong>Estonia</strong></td>
<td>Pension register of the Estonian National Social Insurance board 2nd pillar still very small for pensioners</td>
<td>Flat rate national pension at 63</td>
<td>No Individually based pension rights</td>
<td>Survivors’ pension, if the marriage had lasted at least 25 years, the person had reached pension age or had become permanently incapacitated before divorce or</td>
<td></td>
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</tr>
<tr>
<td>Country</td>
<td>Description</td>
<td>Cross-border Entitlements Aggregated?</td>
<td>Tax Treatment of Pensions</td>
<td></td>
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</tr>
<tr>
<td>Greece</td>
<td>No data published; Social budget stops in 2008</td>
<td>Yes</td>
<td>Received only at death of ex-spouse; strictly means tested.</td>
<td></td>
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</tr>
<tr>
<td><strong>Survivors’ pensions</strong></td>
<td>Means tested pension at 65 equal to farmer’s pensions</td>
<td><strong>Cross-border pension payments</strong></td>
<td><strong>Tax treatment of pensions</strong></td>
<td></td>
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</tr>
<tr>
<td>Denmark</td>
<td>All 1st pillar pensions are individual. Many 2nd and 3rd pillar schemes may incorporate</td>
<td>Data only available for pillar 1 and pillars (2+3). All though are individualized by pillar</td>
<td>Data refer to gross. Interest earned on pension investment treated preferentially.</td>
<td></td>
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</tr>
<tr>
<td>Sweden</td>
<td>Pension rights are individual rights. A married person can choose to transfer his/her pension entitlements to her/his spouse or partner</td>
<td>Data on total pensions from all sources can be produced after request, but are not available to the general public.</td>
<td>Gross. Certain supplements are not subject to tax; taxed less favourably than employment income.</td>
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</tr>
<tr>
<td>France</td>
<td>Survivor’s pensions are means tested Women only having derived rights (widow’s pensions) not included in data, approx 900k women</td>
<td>Yes, in the Inter-pension fund sample (EIR)</td>
<td>Data does not include payments to non-residents.</td>
<td></td>
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</tr>
<tr>
<td>Poland</td>
<td>85% of spouse’s pension, provided +50 years old (if 45 y.o. at the moment of spouse’s death, he or she will receive spouse pension when turning 50 y.o.). If spouse dies before retirement age, then pension is calculated as 85% of disability pension.</td>
<td>(new) Mandatory system: entitlements for both pillars in individual personal accounts.</td>
<td>Gross. Treated as income from employment.</td>
<td></td>
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</tr>
<tr>
<td>Netherlands</td>
<td>Payable only before age 65</td>
<td>Difficult to aggregate 1st pillar and other pillar pensions</td>
<td>Gross. Marginal rates lower for pensioners.</td>
<td></td>
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</tr>
<tr>
<td>Austria</td>
<td>Depends on relation between own and deceased spouse’s income; 0%-60%; minimum for low incomes</td>
<td>Administrative data refer to rights not persons.</td>
<td>Gross. Treated as income from employment.</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Italy</td>
<td>Survivor’s pension paid to spouse – RESTRICTIONS</td>
<td>Theoretically individually attributed. Inaccuracies persist</td>
<td>Gross</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>UK</td>
<td>Rights differ by kind of public scheme. Earnings related part can be inherited to max 50%.</td>
<td>Problem in aggregating total pensions of first plus second and third pillars</td>
<td>Both Gross and Net data provided</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estonia</td>
<td>Survivors’ pension to a survivor who has reached pension age or has become permanently incapacitated and the marriage had lasted at least 1 year</td>
<td>Each beneficiary may receive only one state pension at his/her choice at any time</td>
<td>Gross</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>Yes, Depending on fund 70% of deceased pension Possibility of choosing if own pension exists</td>
<td>No</td>
<td>Gross; net of social insurance contributions</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Source: ENEGE experts group: Michael Jørgensen (DK), Anita Nyberg (SE), Rachel Silvera (FR), Dariusz Stanko (PL), Chantal Remery and Janneke Plantenga (NL), Ingrid Mairhuber (AS), Gianni Betti (IT), Colette Fagan and Helen Norman (UK), Lauri Leppik (EE), Platon Tinios (GR)
B. Three recurring themes from the mosaic of national specificities – Comments from ten member states

Apart from attempting to collate administrative data, the experts could be used to illustrate three themes that have recurred through the report.

Theme 1 Interpreting long term trends / projecting the future

Some experts commented on aspects of relative performance, and what that may mean for future prospects. The common denominator was one of unease of things to come, even in those cases where the current situation appears relatively benign:

Estonia (Lauri Leppik)

Why does Estonia have the lowest gender gap in pension in the EU, whilst also having a wide pay gap?

The gender gap in pension in 65+ age group is explained by the following factors:

1) The old age pension formula has a flat rate element, which in 2010 was about 38% of the average old age pension;

2) Pension rights up until 1999 are counted on the basis of the length of service, while the amounts of contributions determine only those rights which are acquired from 1999 onwards;

3) Employment rates of women in Estonia have been historically rather high;

4) Even if the current gender wage gap is high, the wage gap is higher in younger age groups and somewhat lower in older age groups, hence the wage gap does not (yet) show up as pension gap. The wage gap is influencing only those cohorts which have retired after 2000 and only for that part of pension which relates to rights acquired from 1999 onwards.

5) Up until 1999 the periods of taking care for children were taken into account in a generous manner: the periods of parental leave up to three years were equalised with employment, and an additional two years were credited for each child raised at least 8 years. Even though the periods credited for child raising became considerably less favourable after 2000, most of the current retirees have raised their children before 1999 and get their child raising credits. The child raising credits have been improved again in 2012. These will be applied retrospectively also for child raising periods 2000-2012.

If the high gender wage gap persists, the gender gap in pension will gradually increase in the coming years as pension rights acquired since 1999, are based on the amounts of contributions paid. Furthermore from 2002 a mandatory funded pillar was introduced, directly linked to contributions (contributions for the funded pillar are 6% of wage). Currently second and third pillar pensions have still a marginal role in retirement incomes as benefit payments from the second pillar have commenced only from 2009 and many of these payments are still lump sum due to the short accumulation period. 

74 The child rearing credits have been improved again in 2012. These will be applied retrospectively also for child raising periods 2000-2012.

75 The unisex life tables for calculating annuities in the second pillar will in future entail some gender redistribution, in particular considering the very wide gap between life expectancy of men and women in Estonia.)
Poland (Dariusz Stanko)
Multi-pillar Reform and the prospects of the Gender gap:

The gender gap in pension in Poland, even though quite substantial, is likely yet to become a problem to come, because most of the retirees received their pensions from the old pension system. The old pension formula contained a common social term, which flattened, to some extent, the differences in benefit values of males and females. Those who retired after the year 1999 (when the pension reform was introduced) still have most of their pension financed from pension entitlements acquired from the old pension system.

In the case of the agricultural pension system one can infer that there are no serious gender differences due to two factors. First, the agricultural pension formula depends only on the number of years, when a person was liable to pension insurance or worked in a farm. Thus, this condition does not differentiate the situation of men and women. It is mainly due to the fact, that in spite of its name, the pension system for farmers has no insurance features and is financed from the taxes of other social groups. Second, the absolute values of pension benefits are quite low due to the flat nature of the formula; therefore, any gender differentiation is likely to represent also small absolute values.

The new defined Contributions (DC) pension formula in statutory pension system (covering the vast majority of Polish workers) does not offer the redistribution part (from poor to richer and/or from men to women). The value of monthly pension benefits is calculated as the result of dividing the value of pension entitlement (first, unfunded pillar) or pension savings (second, funded pillar) by the number of months on expected lifespan on retirement (unisex tables). Bearing in mind the typical problems women face (lower salaries, longer career breaks due to child and family care), the DC formula this may result in drastically lower retirement benefits for women in the new Polish system.

However, there are some factors mitigating the pension gap: i) unisex life tables that favour women, ii) equalized retirement age (from 2040 67 years for both sexes), iii) minimum pension guarantee (calculated for both funded and unfunded pillar for the insured whose insurance coverage was 20 (women) or 25 (men) years long), iv) crediting mechanism for both pillars for women who are on maternity leave (value of contribution is calculated upon the maternity benefit). Also, to some extend such effect is obtained due to v) survivors’ pensions granted to a surviving spouse under some conditions. Usually this is the case of women who either obtain survivor pension equal to 85% of husband’s pension or if already retired – can choose the full.

Denmark (Michael Jørgensen)

Historical development of the multipillar system and simulating prospects
Until 1990 only about 30 % of the working population were saving in an occupational pension. Because of this relative low rate, an agreement between employee, employers and the government was made in 1987 to increase the savings in occupational pension, starting in 1990 and ending in 2009. As a result of this agreement, around 90 % were saving in an occupational pension fund in 2009 and the saving rate had increased to 12 %. for the new occupational pensions. The increase was primarily made in the private sector, were almost only people with long educations and salaried employees were supplementing their old age pension with occupation pensions before 1990. Since a higher share of women historical has been employed in the public sector, the increase affected men relatively stronger than women. On the other hand a bigger share of women started working in the 1960’s, 1970’s and 1980’s, and as a result of this a larger share women were starting to save in an occupational pension and thus accumulating pension wealth.

It is possible to project income replacement at retirement for today’s 40-45 year olds. Because the old age pension is universal and the level is the same for everybody (before means testing) it is not equally important for people with high and low incomes. For people with very low incomes the saving needed in
order to get a reasonable replacement rate when you retire, is much lower. This is amplified by the progressive taxation and the means testing in the old age pension. The progressive taxation forces high income earners have to save relatively more because they are taxed harder. And since the means testing don’t start before a certain threshold (at about 50% of the old age pension) it reduces the marginal value of saving more for people who have a lot of pension wealth. These facts are important when comparing men and women’s pensions because men on average earn more than women, and therefore they also have to save relatively more to obtain the same replacement rate.

Austria (Ingrid Mairhuber)

The dangers of closer linking of pensions to contributions and gender gaps
Despite the five year difference in the statutory retirement age women do not retire significantly earlier than men because women reach the required insurance period for an early retirement due to long insurance duration less often than men. Even so, the difference in benefit levels between women and men is enormous, as discrimination against women is enshrined in the earnings-centred Austrian pension system (Mairhuber 2009):
The pension is dependent on the type (of employment contract), length and continuity of gainful employment as well as the level of earnings. The “female life context” or breaks in employment and reduction of gainful employment owing to unpaid care work, limited employment opportunities and income discrimination result in structural disadvantages for women. The traditional male “norm(al) biography” can hardly be achieved by women, above all where it concerns earning mothers. Changes in the employment market, the growth of “atypical” employment, in particular the soaring of part-time work, discontinued careers and increasing unemployment as well as restrictive pension reforms, which in recent years have further strengthened the connection between gainful employment and benefit levels, are increasingly tightening the situation...

When assessing the gender (in-) equality of the Austrian pension system over time it is important to note, that with the “Act on the Harmonisation of Austrian Pension Systems” (2004) a new pensions system has been introduced, but the new regulations are only fully applied to those who had not acquired any pension entitlements before January 1, 2005. For those younger than 50 on that date, pension entitlements are calculated as a mix of old and new provisions on a pro rata temporis basis, whereby different regulations apply for different age groups. The new regulations will be less favourable to women, especially if they have discontinuous working biographies.

Theme 2: The question of Data and data comparability
National administrative data has to contend with system fragmentation or heterogeneity. In some cases (multipillar systems, such as UK, Netherlands or Denmark) this is a design feature; in others it may be seen as a governance shortcoming (Greece). In all cases the key problem is to match pension entitlements to individual people.

The Netherlands (Chantal Remery and Janneke Plantenga)

Data availability problems in a multipillar system
Administrative (aggregated) data are available for the AOW (Dutch General Old Age Pensions Act) and are provided by the Sociale Verzekeringsbank (SVB). This organization implements national insurance schemes in the Netherlands.

With respect to the second and third pillar, there are only very few administrative data publicly available (provided by the Nederlandsche Bank (DNB)). The reason might be related to the number of actors involved. The Dutch pension system consists of 651 pension funds (end of 2008); 543 of these funds are single-employer funds, 95 concern industry wide funds (of which 69 mandatory) and funds are for
professional groups. Together, these schemes cover approximately 6 million members. Apparently, pension funds provide data on pensions to Statistics Netherlands, but these are not publicly available.

The publicly available data do not enable a disaggregation by pillars. There is information of the SVB on the first pillar. This information includes data on all persons in the Netherlands receiving the state pension AOW. Data are available on the number of recipients by gender, age-categories and household characteristics. In addition, there is information on the number of persons who are cut on their pension because they did not live permanently in the Netherlands between the age of 15 and 65. There is, however, no information published on the number of people who are not entitled to the AOW. Survey data from Statistics Netherlands indicate that this is a very small group. There are no public data on the average amount of AOW paid per person (by gender).

There is some information on the total amount of additional pensions (pillar 2 and 3), but a breakdown by the two pillars is not possible. These data are from Statistics Netherlands and are based on National (representative) income surveys. As a result of the different sources of the data, it is rather difficult to fill in the excel-tables.

**Italy (Gianni Betti)**

**How many pensioners? Data Cleaning difficulties**

Note: some prevalence ratios are greater than 100 because there are more pensioners than people in the age class. This is due to the fact that the original data record pensions not pensioners. This source (ISTAT; the main statistical institute) converts pensions into pensioners, but clearly the conversion is imperfect and some double counting remain. This affects especially older people who are likely to cumulate more than one pension originally accruing to different beneficiaries.

**Coverage of the Italian system (Istat)**

<table>
<thead>
<tr>
<th>Age Class</th>
<th>Men Pensioners</th>
<th>Men Population</th>
<th>Prevalence</th>
<th>Women Pensioners</th>
<th>Women Population</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-54</td>
<td>753099</td>
<td>20551953</td>
<td>4</td>
<td>663956</td>
<td>20146011</td>
<td>3</td>
</tr>
<tr>
<td>55-64</td>
<td>1945727</td>
<td>3528865</td>
<td>55</td>
<td>1701652</td>
<td>3736220</td>
<td>46</td>
</tr>
<tr>
<td>65-79</td>
<td>3988161</td>
<td>3923307</td>
<td>102</td>
<td>4210290</td>
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<td>80+</td>
<td>1216990</td>
<td>1148298</td>
<td>106</td>
<td>2298567</td>
<td>2231199</td>
<td>103</td>
</tr>
<tr>
<td>65+</td>
<td>5205151</td>
<td>5071605</td>
<td>103</td>
<td>6508857</td>
<td>7010414</td>
<td>93</td>
</tr>
<tr>
<td>All</td>
<td>7903977</td>
<td>29152423</td>
<td>27</td>
<td>8874465</td>
<td>30892645</td>
<td>29</td>
</tr>
</tbody>
</table>
Greece (Platon Tinios)

Gender invisibility and system opaqueness

Greece produces no individual-level data. Data aggregates on social insurance providers budget data was available in the Social Budget, an annual publication. The last available year is 2010 (budget data for 2009, which would have been compiled in 2008). Thus no official information exists on the effects of the crisis. Distributional information on pensions exists only for the private sector fund, IKA; however, no gender breakdown was ever available, while the last available data refers to 2006. That data never aggregates primary and supplementary pensions, while it refers to pension rights and not people. Nevertheless, information is produced and is made available to the National Actuarial Authority, which in its turn, produces some actuarial studies and has projected expenditure for the Economic Policy Committee’s Ageing Working Group. This data, however, is not made publically available.

As a consequence, gender imbalance in pensions as an issue remains invisible. The pension system is insurance-based, and hence leads to lower pensions for women. A large vesting requirement (minimum 15 years’ contribution) plus a requirement for active links to the labour market prior to retirement leads to many women having no right to a pension at all.

In a very fragmented system of pension provision, the Farmer’s pension provided a ‘floor’ for gender (im)balance; all women resident in rural areas were entitled to such a pension at 65. Indeed, the farmer’s provider was the only one in which rights were individual, rather than family-based. However, the introduction of a new contribution-based system in 1998 reverted to a traditional system where farmer’s wives were insured through their husband’s contributions and would not be accumulating towards their own pension.

Theme 3: Pensions rights unrelated to own contributions

When analyzing the SILC data, time and again, the issue of pension rights not directly associated with the payment of contributions was raised as a key factor intervening so that the pension system may lead to outcomes different from the simple accumulation of lifetime earnings. What is striking is the heterogeneity of such provisions. The comments illustrate this.

UK (Colette Fagan and Helen Norman)

State Pension entitlements for divorcees: three court-determined divisions of rights

The 1999 Welfare Reform and Pensions Act gave powers to the Court to split rights to occupational and personal pensions between husbands and wives on divorce (and following dissolution of civil partnerships) filed on or after 1 December 2000 (Pensions Advisory Service 2009).

Following divorce from a marriage or civil partnership, an individual has the right to make a claim on their husband, wife or civil partner’s pension with the financial agreement to be settled in one of three ways:

1) Pension offsetting takes place when the value of one partner’s pension is compared to the value of the couple’s other assets, such as property for instance. Once the financial arrangement is made, the partner with the pension will retain this while the other partner will receive something of equal value.

2) Pension sharing occurs when the value of one partner’s pension at the time of divorce is divided between the couple. The shares may not be equal as they are determined by the court.
3) Pension attachment is when an individual receives an agreed proportion of their partner’s occupational or personal pension when it is paid to them, which could be a lump sum or money or a regular pension payment although if the partner dies, the payments will cease (Directgov 2012)

France (Rachel Silvera)

Survivor’s pensions and other pensions for derived rights

In France, there is the minimum old-age pension for people who have never worked and have no right from a spouse. Widows, widowers and the disabled have pension rights, but survivor’s pensions are means-tested. There is an important distinction between direct personal rights and derived rights. The main derived rights concern widowers and above all widows in the form of survivor’s pensions. But in (administrative) data, only people who have direct AND derived rights are included. There are not many people (mainly women) who only have derived rights (namely totally economically inactive widows). According to data for 2004, 900,000 women and 19,000 men were in this situation, but many of them were not yet 65 and therefore had not yet applied for their direct rights.

Other derived rights are linked to the presence of children, who lead to advantages for parents in the form of additional contribution years. Derived rights (on top of direct rights) play an important role for women and fill in some of the gap regarding direct rights. These derived rights in fact represent 20% of women’s total pensions (compared with only 1% for men).

Monthly gross amounts and composition of pensions (all ages) by gender in 2008

<table>
<thead>
<tr>
<th></th>
<th>Men (€)</th>
<th>Men (%)</th>
<th>Women (€)</th>
<th>Women %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct personal rights</td>
<td>1,657</td>
<td>95</td>
<td>879</td>
<td>75</td>
</tr>
<tr>
<td>Derived rights</td>
<td>15</td>
<td>1</td>
<td>238</td>
<td>20</td>
</tr>
<tr>
<td>Additional advantages</td>
<td>68</td>
<td>4</td>
<td>40</td>
<td>3</td>
</tr>
<tr>
<td>Minimum old-age pension</td>
<td>9</td>
<td>1</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Total pension</td>
<td>1,749</td>
<td>100</td>
<td>1,165</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: EIR 2008, La Direction de la recherche, des études, de l’évaluation et des statistiques (Drees)

Sweden (Anita Nyberg)

The guarantee pension

The Guaranteed pension is part of the national retirement pension and is paid to those who have had little or no pension-qualifying income during their lives. A person is entitled to guarantee pension at the age of 65 years of age. They are included in the data. In order to get a full guaranteed pension a person must have lived in Sweden for 40 years. If a person has lived in Sweden shorter than that, the guaranteed pension will be lower. Guaranteed pension will also be reduced if a person has an earnings-related pension. Guarantee pension can be paid to persons who are residents in an EU or EEA country.

Pension rights are individual rights. In the case of married couples where only one spouse has been employed, the non-employed spouse is entitled to a guarantee pension. Full guarantee pension is lower for married/cohabiting/registered partners (6,967 SEK) than for a person who is single (7,810 SEK). A married person or a registered partner can choose to transfer her/his pension entitlements to the premium pension to her/his spouse or partner.
C. A Comparison with the German Federal Ministry Study (2011)

In November 2011 a study on gender gap in pensions in Germany was published. The study, entitled “The Gender Pension Gap: Developing an indicator measuring Fair Income Opportunities for Women and Men” was commissioned by the German Federal Ministry for Family Affairs, Senior citizens, Women and Youth and was conducted by Judith Flory of Fraunhofer Institute for Applied Information – henceforth referred to as the ‘German Study’. Its subject matter, its methodology, focus and recent publication, make comparison with this study an exercise which will aid understanding and take the discussion forward.

The definitions employed by the German Study are identical to those employed in our study. The indicator, as is the case with our ‘headline indicator’ is confined to individuals over 65, which is the legal retirement age in Germany. The study employs administrative data for 2007 compiled every four years in the ASID database of all pension funds, conducted on behalf of the Federal Ministry for Labour and Social Affairs. The use of administrative data, rather than survey data, is the main source of difference with the current study. Using administrative data amounts to attempting to calculate our ‘pensioner’s pension gap’; people not covered by the pension system are by definition excluded\(^76\). The ASID database aggregates all pension rights into total individual-based entitlements, i.e. the total of all pensions of all pillars and all providers. An interesting point, which differentiates it from EU-SILC is the ability to net out survivors’ pensions.

The key findings of the study are as follows:

- The gender gap in pension is very large – fully 60%.
- The gender gap is lower in the East (37%) than in the West (64%)
- Higher education implies lower pension gap
- The presence of children widens the gap more in the West than in the East.

The results by marital status are especially interesting. Germany has a system whereby on divorce the couple’s total pension entitlements are aggregated and then split equally. This has the effect of increasing women’s entitlements at same time as reducing men’s, which explain the lower gaps for divorced people – a little larger than for singles but far smaller than either married or widowed people\(^77\).

The German study asks how the gender gap is evolving over time. It is able to do that, as by netting out survivors’ pensions, it can compare pension outcomes that accrued to individuals who were born at different times. Indeed comparing the youngest cohorts (aged 65-69) in ASID from 1992 to 2007\(^78\), pension gaps have fallen from 64% to 54%.

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\(^{76}\) Though, as we saw above, the coverage gap in Germany is not very large.

\(^{77}\) Survivors’ pensions are disregarded in this comparison.

\(^{78}\) i.e. people born from 1910 to 1942.
The German study concludes by examining SILC data for 2007 for the EU-15. They do not exclude non-pensioners, so they estimate what we have called the ‘elderly pension gap’. That gender gap for Germany is some 20 points lower than that derived from ASIP administrative data. The difference is accounted for by the exclusion of derived rights, the chief of which is the **survivors pensions**; when they add survivors’ pension to ASIP data, the gender gap drops to comparable levels with EU-SILC.
CHAPTER 4: OVERVIEW AND CONCLUSION

4.1 An Overview of the argument

Whereas the pay gap between men and women – known as the gender pay gap – is regularly followed, studied and its amelioration is a policy target, its equivalent that would be applied to an older population – the gender gap in pension – was hardly ever mentioned until recently. Very little internationally comparable information exists, while the suspicion lurks that gender imbalance may be worse in those countries where less is known about it. The estimates that exist for individual countries are sufficient to engender a sense of unease. They can also signal that information gaps could have important welfare implications, in the sense that the important policy areas and initiatives are missed out through being unremarked. That issues of great importance for the independence of older women lack visibility, could be interpreted by some as another example of that group of citizens being taken for granted.

This report argues that the gaps in pension entitlements between women and men in Europe, should be the object of an annual statistical indicator. This indicator should be equal to the percentage by which women’s average pensions are smaller than men’s average pensions, calculated for pensioners over 65 years of age. Such a simple indicator would, for the first time, produce comparable information across Europe and will be able to chart changes from year to year. The ready availability of such an indicator would, of itself, provide visibility for the problem. Having established key differentiations, a better understanding of their underlying causes will come about. The final reward would be a detailed understanding of policy initiatives that can ameliorate problems and possibly prevent them.

The key characteristic of pension gender differences is their complexity. In the pensions of today’s older generation we see at the same time the legacy of past imbalances and the premonitions of future problems, some of which unwanted consequences of reforms undertaken in the past. The year-on-year problems caused by the economic crisis and the conjuncture add an added twist. The situation affecting today’s older population is due to a mixture of all three classes of factors. This mixture of factors will be different in different parts of Europe, and may be moving in different directions over time.

Taking this diagnosis as a starting point, this report argued that, in order to base initiatives on a sound foundation, the first step should be to benchmark the current situation facing the older population of the member states of the EU. To do this it is imperative that information is derived from a European data source. Administrative data may be more familiar to local users, but their use in comparisons raises a host of questions and would complicate rather than enlighten the issue.

Thus, having established the motivation for a gender gap in pension indicator, the report proceeded to twelve linked statistical steps, designed to establish a statistical starting point for the analysis. This could be
by supplying robust stylized facts about particular issues, but also by charting the degree of complexity that would otherwise cloud judgments.

The final step was to revisit administrative data. A network of ten experts from ten different member states were utilised together with a recent study commissioned by the German government. Experts were asked to report information about gender gaps comparable to the one produced by our analysis, using locally available administrative data. In the typical case the data had been produced as a side product of the process of paying pensions. Though in some cases finding the data and producing the breakdowns required proved little problem, in the majority of cases producing data which conformed to some minimum theoretical requirements proved very difficult; in others it proved impossible; in one case, at least, no information was produced by gender at all. Even when the data existed, differences in coverage and definitions would further hinder their regular usage. It might have been a coincidence, but the country with the smallest measured gap also was easiest to produce data; data was problematic or non-existent in countries where the problem (as evidenced in the SILC analysis) was most acute.

The report concluded by viewpoints of the ten national experts which covered three themes: Prospects for the future; data and gender visibility; and the issue of derived rights. The experts largely concur with the conclusion that more needs to be done to understand what causes gender gaps; and that, even in those cases where the issue is less acute; there are no grounds for complacency.

### 4.2 Findings of the fourteen statistical steps: Towards stylised facts

The statistical analysis proceeded in a series of structured lines of inquiry – what we termed ‘steps’. Each was designed to investigate particular aspects or questions; each step may have undertaken and presented more than one statistical exercises and on occasion used more than one data source to approach the same question. In summary the results are as follows:

**STEP 1: How wide is the pension gap in Europe?**

Our central estimate of Pension gap – what we termed the ‘headline indicator’ is very wide. **The EU-27 average is 39%**. The two highest figures are for Luxembourg (47%) and Germany (44%). At the other extreme, Estonia is lowest (4%) followed by Slovakia (8%). A large number of countries are around 30%, while fully 17 out of the 27 have gender gaps in pension greater or equal to 30%.

This is more than twice the figure of the pay gap indicator (equal to 16%). However, there is no simple relationship between the two figures. Suffice it to say that Estonia (lowest pension gap) also has the highest pay gap. Indeed, it is possible that two separate relationships exist: one where high pay gaps coincides with lower pension gaps, typical in Eastern Europe; and one where a large pay gap is associated with a large
pension gap. This can be taken as an indication that pension may dampen pre-existing inequality, but may also widen it, sometimes as an unwanted side-effect of design features.

**STEP 2 and STEP 3: Who has a pension? Coverage effects and the elderly pension gap**

Pension gaps may also be calculated for the total population over 65, what we called ‘the elderly pension gap’. In some or possibly most countries (e.g. Germany, the Netherlands, Denmark) this makes for little difference, as all elderly people are drawing some kind of pension. However, in a large subset of countries there are large numbers of women who have no pension, probably because they have not accumulated sufficient rights for their own pension, or because they are thought to be dependents of their husbands. These countries are Malta (coverage gap 34%), Spain (27%), Belgium (17%) Ireland (16%), while six countries have coverage gaps greater than 10% and nine greater than 5%. Allowing for people with no pensions predictably has a large effect on computed pension gaps. The country with the largest elderly pension gap is Spain (52%), followed by Malta (49%), hence altering the country rankings considerably.

**STEP 4: Is the pension gap tending to rise or fall? Cohort analysis**

The pay gap in all developed countries and in Europe has been shrinking in the past 20 years, although progress may have stalled in recent years. Is this mirrored in pensions? A cautionary note must be sounded from the US, where an equivalent reduction in pay gaps was associated by immobility in pension gaps (Even and Macpherson 2004).

If we compare pension gaps of those aged 80+ with those aged 65-80, we see that pension gaps are considerably lower for the older group. However, this may be due to the equalising effect of survivors’ pension collected by widows. Indeed, excluding widows from the analysis reduces the difference but does not obliterate it. A similar exercise using data from SHARE leads to a mixed picture: In Greece, Denmark, the Czech Republic and Austria (and possibly in Germany) younger people’s pension have higher gaps. In contrast, in France and Spain the opposite is the case, while in Italy and Belgium (and possibly in the Netherlands) differences are small.

In consequence, for this very important issue, the data are essentially agnostic.

**STEP 5: Effects of education and lifetime income.**

Education is a key determinant of lifetime chances and is thus closely linked to lifetime income (what economists call ‘permanent income’). Given that we know educational attainment of future pensioners will rise, if gender gaps rise with education, that would serve as an indicator that gaps will rise in the future. However, the picture emerging from the data, is very mixed. Though in the EU27 the higher the education, the larger the gender gap, this is not a picture which holds in all member states. In some it does (Sweden, the UK, the Netherlands), in some the opposite holds (Spain, Austria, Portugal), while in others most of the gender effect comes from differences between and within educational categories (Greece, Germany).
Decomposition analysis suggests, in particular, that the gap was boosted by (past) gender disparities at the bottom and at the top of the educational spectrum, not around the middle.

**STEP 6: How are pensions distributed?**

Pension gaps focus on average pensions; however, a linked issue of importance is how pensions are distributed around the average. Predictably, women are greatly overrepresented among lower pensions and overrepresented in higher pensions. Fixing the pension level to that of the poorest third of men, we see that for every poor man, we have almost two poor women. Denmark is the country where women’s distribution comes closer to men’s, while the Netherlands is at the other extreme. Even when the linked issue of calculating separate gaps for each third of the distribution is examined there are some countries where that is rising with income (IE, PT, DK) and some where it is falling. In general, the link of pension gaps with level of pensions appears to be a systemic characteristic which operates in different ways in different parts of Europe.

**STEP 7: Does income tax make a difference?**

Pension gaps after tax are very little different from pension gaps before tax, with the exception of Finland and Italy.

**STEP 8: Can we discern trends in the pension gap over time?**

Comparing points five years apart (2010 and 2005) we again see a mixed picture. Whereas on average there is a widening of gaps (by 1.7pp), this masks opposing trends – from improvements in Belgium (-4.9), Latvia (-7.7) and Italy (-4.4) to deterioration in Denmark (6.4) the Netherlands (5.4), Germany (4.2).

**STEP 9: Pension Gaps and Broken Careers.**

Women have worked for fewer years than men. In general shorter careers are associated with larger pension gaps, though that relationship is not one-to-one. In some cases gaps rise and then fall. Distinguishing ‘dominant job’ during one’s working life, the lowest gender gaps are met in the public sector (where they might even be negative), and the largest for the self employed.

**STEP 10: The effect of multipillar systems: some indicative results**

Our focus on people 65+ means that in most countries the effects of multi-pillar reforms are not visible. However, in Denmark, the Netherlands and in Switzerland the second pillar is sufficiently mature to enable some analysis, using data from SHARE. In those countries gender gaps of the public pillar on its own is negative; the addition of the occupational pillar is heavily imbalanced by gender. Thus the composite of the two pillars has a wider gender gap than the public pillar. The second pillars in those countries also display a very significant coverage gap, especially for the second pillar.
STEP 11: Gender gaps by marital status; Is there a motherhood penalty?

Gender gaps are narrower for single women; even so, though, gender gaps remain large (17%). Gender gaps are widest for married women, while divorced women are somewhere in the middle. However, there are very marked national differences. Using SHARE data, a very clear and strong relationship is apparent between the number of children raised and the gender gap. This relationship is strongest in France and weakest in Denmark.

STEP 12: The intra-household Gender Gap in Pension

The unit of measurement for the headline indicator, the gender gap in pension income, is the individual. The comparison here involves judging the mean pension for women against the mean for men. However, a gender gap indicator for pensions can also be meaningfully computed at household level. By looking inside the household, we compared each woman with her own partner and generated a distribution of household gaps. The median and the trimmed mean of this distribution turned out to be the most robust indicators for the intra-household gender gap in pension.

We found that the intra-household gap is higher than the aggregate gap in the EU as a whole and in the vast majority of its member countries. This follows from complex interactions involving the institutional design of the pension system as well as statistical factors - the intra-household and the aggregate gaps are measured on different subgroups of the elderly population - and behavioural processes – who marries whom and who earns the most within families. In particular, the median intra-household gap is 4pp higher than its aggregate equivalent in the EU27 (46% against 42%) and over 20pp higher in five countries. In only six countries the median gap is lower within households than in the aggregate: Estonia, Greece, Ireland, Latvia, Romania and Slovenia.

STEP 13: Putting the picture together: decomposition analysis

Decomposition (‘Oaxaca’) methods were employed on SILC data in order to supplement the factor-by-factor analysis with a multivariate examination. The picture, once again, is of complexity and heterogeneity: the combined gender differences in those variables available in SILC have a modest impact on the gender gap in pension. In six of the nine countries we investigated for the purpose, netting out the combined effect of gender differences in marriage status, education, age, years in paid work, and weight of pillar 3 in pension income causes the gender gap to vary in a range comprised from-15% to +11% of the original gap (UK, the Netherlands, Austria, Greece, Italy and Poland). In Germany and France the original gap decreases by around 30% as a result of the netting out while in Estonia it disappears entirely; unlike France and Germany, however, Estonia has a very low gap to start with, around 4%. Although any given characteristic tends to pull the gap in the same direction across countries, their combined effect differs from country to
country and it may augment or decrease the gap. This could be because of the complexity of interactions but also may stand in for the operation of the pension system.

4.3 Policy lessons

Gender gaps in pension are an important issue both for welfare, but chiefly for the independence of the older Europeans – both women and men. As those newer and larger generations of pensioners, who will have experienced the benefits of greater gender balance in employment, enter pensionable age, they might find the situation awaiting them in the pension system increasingly constricting. The fear is that, individuals accustomed to economic independence in their daily affairs might be confronted with a pension context presuming dependence. What has been gained in the labour market may be reversed in pensions.

Is this danger unfounded?

The worrying fact is that, in most European contexts, we are only now moving towards giving a convincing answer to this question – one way or another. The statistical analysis showed that gender gaps in pension are unexpectedly wide – many times wider than pay gaps. One especially unsettling issue is to do with the lack of visibility and awareness of the problem. This is partly due to problems in national administrative data but is certainly aided by lack of information benchmarking national situation against a European norm.

This report made a start in this direction. What it uncovered are wide gaps in most countries, a wide dispersion of gaps across Europe, but also an overwhelming complexity especially when trying to relate observed behavior to causal influences. A key part of this complexity is to do with the cohort effect: what is observed to hold for today’s older population 65+ may not hold when they are replenished by those who today are in their forties. We know that the older generation in future decades will be more educated, will have worked to a greater extent and will have benefited from all the improvements of the heyday of the welfare state of the 1970s to 2000s; so many of the factors behind today’s disadvantage will gradually decrease in importance. A key area of ignorance is how the population responds to the oftentimes radically altered incentive structure embodied in reformed pension systems.

What is certain is that wide gender gaps in pension are the outcome of a series of overlapping factors, at least some of which are due to unforeseen and unanticipated consequence of policy decisions made in other contexts. What is also certain is that in many, if not most, cases relying on improvements in pay gaps of the working generation to percolate through to pensions would be insufficient.

When a new concern enters policy ‘radar screens’, understanding proceeds in three steps. The first stage is awareness – simply to have the issue visible. With the second phase comes amelioration – correcting the worse consequences, after the fact. By the third phase, the source of the problem is sufficiently well understood to proceed to prevention of the underlying source of the problem.
In the case of gender gaps in pension we are still in stage one – visibility of the issue and an ability to grasp its complexity. It is in this first stage that the EU can play a decisive role: to place the issue on the agenda and, through benchmarking to galvanise the type of national initiatives that would be in a position to deal with actions ameliorating the worse effects but also acting to prevent the underlying causes giving rise to the issue.

The report uncovered wide gender gaps. It also uncovered particular instances where developments were in the direction of making matters worse in a relatively short period of five years. Examination of the national differences in experience uncovered very few ‘easy generalisations’. For instance Denmark and the Netherlands have opted for a stronger second pillar; however, this choice did not translate, at least in our work, in consistent clustering of these two countries. The worries about gender impacts and unpredictable effects may be exacerbated as the economic crisis and the need for retrenchment affects pensions in as yet unforeseen ways.

The report can, nevertheless, hint at the existence of policy alternatives that by, compensating disadvantage, end up perpetuating it. Such would be measures encouraging women to leave the labour market early, with the consequent permanent reduction of pensions and increase of the poverty risk of single women. Policies that mitigate disadvantage – relying on survivors’ pensions, on ‘married bonuses’ to men’s pensions – can also fall in this category. In contrast, policies that attack the root cause of disadvantage, such as credits for child rearing, can be thought to operate towards creating a level playing field between men and women.

The one policy lesson that – at this early stage - can be repeated is: Vigilance.

4.4. Directions of future work

The present report essentially dealt with description of the underlying situation in the 27 member states. This was done through a factor-by-factor analysis (which would be useful should amelioration of the worse problems be the desideratum); it also made a start on a simple multivariate analysis using the Neumark version of the Blinder-Oaxaca decomposition, as well as examining intra-household pension gaps. What was apparent all along is that there must be a number of influences behind the overwhelming complexity. We can observe clustering of member states, but the identity and membership of the clusters is shifting and does not appear to follow any simple organising principle. For example, the three countries with

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79 The SILC data, on which the report is based, in the majority of cases does not allow to credit specific individuals with access to particular benefits. Thus comparisons are essentially limited to comparing national averages for countries with different systemic features. Other data sources such as SHARE may allow a more complete characterization of benefits going to the individual level. See the papers in Börsch-Supan, 2011.
relatively mature second pillar systems, the UK, the Netherlands and Denmark, were seldom found in the same grouping, hence precluding any easy generalisations about the effect of multipillar systems.

These observations imply two separate directions – one for policy discussion and policy formation at EU level and another for research.

As for EU work, once sufficient visibility is given to a benchmarking exercise centrally, the question could be put to each member state to ‘respond’ by explaining and projecting its own national issues. This kind of structured dialogue in similar issues has been undertaken with some success in the context of the Open Method of Coordination in pensions as well as in other fields. Its principal benefit is in highlighting an issue and bringing it to the limelight, which are factors which would help most where the problem is least acknowledged. It is thus something which the EU has much fruitful experience to show, and usefully adapt to a very linked issue.

Research needs to go beyond simple description in order to ask analytical questions. It will be recalled that the outset of the analysis are the fears of impending gender problems generated by the Synthetic replacement rates calculated by the ISG (ISG 2009). To take the discussion forward we need to be clear about (a) the composition of the population around the various ‘profiles’ and (b) behavioural reactions to the changed environment. Such could be working longer for women or intra-household decisions leading to more equal distribution of pensions within the household.

In the field of taxation and policy on social benefits, the EUROMOD model has aided policy making and has proved itself invaluable for evidence-based policy formation. To proceed in a similar direction in the field of pensions (which is clearly advocated by the Pension Adequacy Report 2012) would require data far richer than SILC, given that it requires detailed information on past characteristics\(^\text{80}\). In the US the Health Retirement Survey (the precursor and model for SHARE) has been utilised for such purposes. Apart from data we need to research how individuals respond to changed incentives, which needs to utilise amongst others international experience.

A richer set of data would allow us to enrich the analysis by a formal clustering exercise based explicitly on system parameters. In this way we could indentify, the effectiveness of, say, child rearing credits or the impact of more part-time working. The second is to expand the decomposition exercise by including other variables, system parameters but also more sophisticated econometric methodology. The third possible direction is to attempt to link more closely the situation in the labour market and that in pensions through a better understanding of the transition from work to retirement – the sample selection issues that we encountered throughout the report. Those kind of issues are especially important on intra-household

\(^{80}\) For example, we saw in chapter 3 that using SILC we cannot tell how many children a woman over 65 has reared.
effects, which supply the fourth direction: The decision how to react to, say, lower accrual rates (less generous pensions) is a decision taken at the level of the household.

Understanding the dynamics of these effects may hold the key to the policy conundrum: how can we have sustainable pension systems which are serve adequately the social functions for which pensions systems exist in the first place?
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