MEN, WOMEN AND PENSIONS

Platon Tinios, Francesca Bettio and Gianni Betti
In collaboration with Thomas Georgiadis

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Country Abbreviations

AT	Austria	**FR**	France	**NL**	Netherlands
BE	Belgium	**GR**	Greece	**NO**	Norway
BG	Bulgaria	**HU**	Hungary	**PL**	Poland
CY	Cyprus	**IE**	Ireland	**PT**	Portugal
CZ	Czech Republic	**IS**	Iceland	**RO**	Romania
DE	Germany	**IT**	Italy	**SE**	Sweden
DK	Denmark	**LT**	Lithuania	**SI**	Slovenia
EE	Estonia	**LU**	Luxembourg	**SK**	Slovak Republic
ES	Spain	**LV**	Latvia	**UK**	United Kingdom
FI	Finland	**MT**	Malta		

PART 1: Understanding and conceptualising the Gender Gap in Pensions

1.1 Why worry about gender inequality in pensions? Economic Independence

It is an empirical fact that women in most, though not all, developed countries receive lower pensions than men. That observation is confirmed in the form of a statistical generalisation, rather than a rule across the EU member states. It is also true to say, though perhaps with less confidence, that pensions tend to be more unequal between men and women than other forms of income accruing to individuals, such as income from employment. This report first places this finding into context and then attempts to make sense of the patterns of pension gender inequality across space and over a number of dimensions, such as income distribution, education or marital status.

Why should the mere fact of gender imbalance in one particular form of income be of especial worry? After all, insofar as pensions enter into household income, that inequality is already captured by our concern about social inclusion. In other words, if low pensions lead to lower command over resources and hence to a greater risk of poverty or social exclusion, our statistical 'early warning systems' should *already* signal the existence of an issue. To examine pension inequality between men and women as an issue *additional* to social inclusion, we must be concerned about something that is *distinct* and *different* from income inequality.

The key lies in the fact that pensions accrue as a legal title to *individuals* and cannot be alienated from them. Though they certainly add command over resources, this command is tied to a person; it follows her as of right and can be exercised without reference to others, whether they are members of her close circle or not. So, the *added* dimension that justifies separate examination of pension inequality is that of **economic independence.**[1]

Of course, most sources of incomes accrue to individuals. However, employment income, pensions and certain social benefits cannot be alienated or transferred. It is for this reason that sample surveys frequently attribute rents and income from wealth to the household as a whole and not separately to individual members.

Pensions share this feature with employment income. Whereas it is income aggregated over all household members that determines demand over resources and hence permits consumption, especial attention is paid to employment income. The reason for this is that employment income arises due to an individual's efforts and

1 Possessing an independent source of income adds a capability to an individual, even if that capability is not in fact exercised.

cannot legally be separated from her. As pensions replace working age income, an inbuilt symmetry exists between what happens in employment and what occurs in retirement. In this way, the pay or earnings gap naturally predate the pensions gap, which can be seen as the old age sequel of the earnings gap.[2] Indeed, many of the concepts that link gender inequality and the earnings gap can find ready parallels in pension inequality.

By focussing on the economic independence of individuals, we are taking a first step at looking *inside* the household. The analysis of social inclusion aggregates total household income and then presumes that the total is equally shared among household members. In this way the household is treated as a 'black box' while its composition and possible changes over time are disregarded. Examining sources of cash income that are attributable to individuals makes a start at trying to open this particular black box.[3] It is, certainly, true to say that the distribution of resources and tasks among family members goes far beyond the sums of money brought into the home. But those sums do influence unpaid work, household chores, care work for children and elderly people, all of which significantly contribute to wellbeing and have a decisive gender dimension. Nevertheless, given the kind of data that now exist across the EU, being able to track gender inequality in pensions as the sequel to gender inequality in earnings and pay is still an important first step in understanding economic independence as that affects European citizens.

1.2 A fear that economic independence may fall at retirement

Granted that economic independence is a legitimate and distinct concern, what is the reason that would make tracking it particularly important? What is an eventuality that policy vigilance focussed on economic independence should guard against? Why should we be concerned about economic independence for the particular case of pensioners, and at this particular moment in historical time? And how is this concern linked to how pensions provision is organised and financed in the European Union?

The answer to all these questions has to do with the fear that a discontinuity, an unanticipated break, awaits women when they progress to the world of retirement and pensions. Pension systems insure against the discontinuation of work (and also against longevity). As with all insurance, their objective should be forestalling an involuntary drop in standards of living. This is the litmus test for pension systems – regardless of whether they rely on the State or on occupational solidarity, on prefunding or not, on defined contribution or defined benefit pensions. Seeing this

2 If one uses an *earnings* rather than a pay gap, the analogy with pensions is almost perfect

3 Income role specialisation is investigated by 'Household bargaining theory'. It answers questions such as: who performs how much and what type of unpaid housework; who takes key financial decisions; what savings the households makes; the household pattern of consumption; choices on children's education; decisions about separation and divorce and most other important decisions at household level. Income role specialisation ultimately means how much income – from labour, pension or capital 'she' contributes to the household compared to 'him'. One finding from this literature, is, for example, that 'she' takes care of time-consuming, routine chores of household financing –such as paying the bills – but he takes decisions about investment of the financial assets.

This approach of filling the household's black box has potentially rich implications. However, it has yet to replace the traditional approach in social and especially pension policy. This is due in part to its need for new kinds of data.

the other way round, a sharp and systematic discontinuity (evidenced for instance by low replacement rates) would be considered a *prima facie* failure of a pension system, which, at the very least, would merit investigation. It would be considered especially worrisome if there are indications that such a discontinuity comes as a surprise and is not the result of deliberate planning by the individuals concerned.[4]

The difference that retirement may make for independence can be seen by appealing to a different type of argument. Individuals may feel that in retirement they should reap some of the benefits of having invested into a lifetime of work. In traditional societies, where it was the children's duty to take care of mother and father, the fact that the mother had spent more time in non-market activities mattered little. In those cases where children's duty has been replaced by pensions, the pension system could well end up 'forgetting' unpaid work. Moreover, even in the baby boom generation, women primarily focussed on unpaid work could yet enter the paid labour market in contract or part time work as a kind of irregular, last resort, 'independence boost', topping up personal resources. Such a last resort option to top up income is no longer feasible in old age. Women, having spent most of their time in unpaid work, de facto depend on discretionary recognition of past work by their husband and children (as in the past) or some recognition by the welfare state, in the form of departures of strict reciprocity of contributions.

The concern about economic independence and gender is understandable because of the fear of exactly such an unanticipated discontinuity. In the coming years the largest number of women in European social history –the baby boom generation– is poised to enter retirement. This generation during its working career has witnessed a transformation of gender relations in the workplace, but also within the family. This transformation may have started at different times and proceeded at different speeds across Europe and in different occupations. Taken cumulatively, though, it means that women entering retirement now are leaving a world of work far removed from those their mothers witnessed; similarly, the pace of change also means that their own daughters are already facing conditions which are qualitatively different.

The fear that should be uppermost in the minds of pension analysts can now be stated starkly: Is it possible that cohorts of women used to economic independence, have to adjust their expectations downward on retirement? Will gender pension inequality force women either to curtail their living standards more than men, or equivalently to have to rely to a greater extent on their partners? **Put simply, can retirement lead to a loss of freedom for women?** If so, to what extent is this due to the design of pension systems themselves and to what extent is it avoidable or preventable within those systems?

Looking at pension systems across Europe there are many possible routes which might 'surprise' current and perspective pensioners. Foremost would be a fear that pension systems have not adapted themselves sufficiently to the social changes of the previous generation, that reform lags behind reality. Assuming that the 'male breadwinner model' remains the norm would be one such example; the treatment of divorce might be another. We might also encounter the *opposite* problem of the transition generations 'caught in between', who started their lives under a system which subsequently changed. They might either not have had the time or the opportunity to adapt to the new system and the new realities. This effect could result

4 It thus comes as no surprise that actual *total* replacement rates of most pension systems (aggregating over all pillars) cluster around 70 per cent of employment income.

from systems, which rely on incentives to lead to longer careers, more contributions and hence better pensions; these systems need both time for contributions to accumulate, as well as adequate and timely responsiveness to changed incentives.

We may expect to see three kinds of problems, possibly in different proportions in different countries and in different age groups. Most prominent may be problems essentially due to legacies of the past – reflections of past injustices and past inequalities reproduced in today's pensions. At the other extreme, we might see issues that are essentially premonitions of issues to come – such as that the possibility that principles of new pension systems may exacerbate problems systematically faced by women. In between the two, we might find the transition generations - who may have worked and contributed in one system but will be called to collect their benefits under another. This group is not protected by the internal logic of *either* system, old or new. It has to depend on *ad hoc* transition arrangements and assurances given when the reforms were being passed. Given that such arrangements may have been negotiated at times of greater fiscal ease, this last group could find itself, in practice, especially vulnerable to fiscal retrenchment.

In this way, an analysis of how pension system promote or constrain independence must necessarily tackle two classes of considerations: Firstly, permanent issues that would remain in the long term when a system is in full operation, in what economists call 'the steady state'. Such matters would most frequently be due to a possible dissonance between pension system principles and the actual position of women in the workplace and the home. Such principles could be the individualisation of pension rights or the degree of reciprocity between contributions and rights, which would lead to women being systematically worse off in terms of pensions.[5] The second type is in principle transitory and concerns matters where the *specific* characteristics and experiences of current cohorts of women imply a disadvantage. For instance, women working today may be well provided by child care facilities or might take advantage of child care credits; this cannot benefit those women who are now entering retirement. Similarly, incentives to contribute more cannot benefit those close to retirement. This type of disadvantage is not innate in any pension system, but results as a kind of 'collateral damage' suffered by the transition generations. This type of problems is not permanent, in the sense that they would not affect future generations of pensioners. The nature of change in pension systems is so gradual, that these disadvantages will nevertheless be with us for decades to come. They are thus an equally worthy objective for social and pension policy.

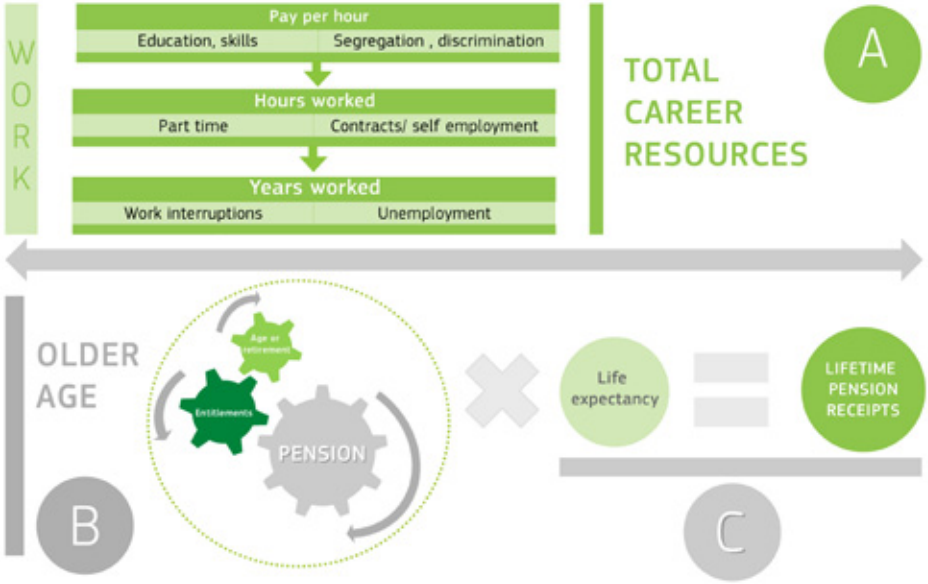
The analysis to come discusses some of the issues that must be faced in framing policy distinguished into permanent and transitory issues. To do so, however, we must first digress in order to understand how pension inequalities arise and in what ways pension systems interact with career structures to lead to the pension outcomes we observe. This will also allow us to clarify a number of concepts that colour alternative viewpoints and that could hinder understanding.

5 For the same reason, and as the degree of reciprocity rises, we may expect a rise in pension inequality among women pensioners in future generations.

1.3 The origin of pension inequalities and some important distinctions

A gender pension gap is almost never simply a question of pension system design. Its explanation is unlikely simply to point to any one specific feature or parameter of the pension system. Typically pension systems cumulate inequalities that occur over a person's lifetime but then filter them through to lead to pension outcomes. Chart 1 reproduces in simple schematic form the three stages corresponding to stages of life where inequalities might arise:

Chart 1: A simple diagram of how pension gaps appear



Source: Betti et al. (2015)

The first panel concerns the world of paid work – which culminates in the determination of lifetime career resources. These are the result of three magnitudes, in each of which there exist systematic gender differences: Pay per hour, hours worked and years worked (where the number of interruptions may be added as an additional variable). In *each* of these dimensions women are, as a matter of record, in a disadvantageous position; some may be structural (or even due to discrimination), others may be due to other choices such as investment in human capital or labour market segmentation, others may be due to choices made by the individuals themselves. These choices may result from reactions to in-built incentives but others may be due to the effects of features not directly observed – the most important of which is the allocation of unpaid work in the family.

In advanced countries the greatest part of pensions is, more often than not, financed through social insurance. In such systems, career inequalities typically generate inequalities in the total contributions paid. However, pensions can do more than simply cumulating past employment inequalities. The situation in the world of employment translates into that of retirement only after passing through the filter of the pension system. That filter is unlikely to be neutral. In many systems it depends directly on accumulated entitlements. There is frequently an element of choice. The individual herself can choose to retire earlier or later if the system allows such a choice or (in

some countries) might decide a more complex exit strategy involving an intermediate stage of either disability pension or long term unemployment. A crucial principle in pension determination is whether the pension is calculated as a function of final salary, most often by relating the replacement rate to years of contribution (final salary or defined benefit schemes) or as an annuity reflecting the accumulation of contributions paid (accumulation or defined contribution schemes). The pension may also be affected by the structure of the overall pension package. Such features may be: the relative importance of the public, occupational and personal pillars (each of which may follow different principles of determination); whether the public pension is split between a part reflecting needs and a part reflecting contributions; whether there exist progressive features in the pension formula favouring lower pensions; whether public pensions are subject to floors and ceilings; and many other features.

In all European countries public pensions were traditionally a lynchpin of social policy, with a well-defined historical role as a poverty prevention and as a social equalisation instrument. The supplementation of public systems with relatively newer occupational and private pillars necessarily limits the maximum impact of social considerations and frequently targets them towards lower incomes (where the public pillar has a greater share). Additionally, other features of both public and private pension systems – such as the closer links between contributions and entitlements, what we have termed 'reciprocity'– will reflect and may even magnify employment inequalities (Chart 1).

The pension system in its capacity as a filter determines at retirement the annual pension income of the individual (which may be composed of separate sums from different directions). This amount would typically form the basis of the stream of income out of which the pensioner's needs will have to be met for the rest of his/her life; it might be adjusted periodically to maintain either purchasing power (where it is indexed to prices) or to guarantee some share in growth (where it is indexed to wages). The other major occasion where there might be a change in pension flows might be the result of the death of one partner. In that case the surviving partner (who in most cases tends to be the woman) might be entitled to a survivor's benefits which (depending on the system) might be added to, supplement or replace any pension she might receive as of her own right.

The final panel of Chart 1 utilises the time dimension and considers the total stock of pensions received over a person's lifetime. This does not only depend on the stream of annual pension amounts. It sums total pension receipts by considering the number of years this stream covers, from the time of the exit from the labour market to the time when the income stream ceases, with the death of the beneficiary. In this way, it is possible to calculate lifetime pension receipts in a manner mirroring total career resources – a stock concept corresponding to the flow of pensions.

1.4 Some conceptual distinctions (entitlements/needs, ex ante/ex post, rationality)

In the case of the world of work *all* factors, pay, length of service, occupational segregation operate in the same direction and hence produce a clear cut case for gender disadvantage. In the case of total pension resources, women tend both to retire earlier and to live longer than men. A smaller pension stream would thus be drawn for a longer time period, leading to the difference of the stocks of pension resources being less skewed against women than would be suggested by the pen-

sion amounts alone.[6] Unless this is taken explicitly into account when pensions are calculated, this will lead to greater stock of pension resources being absorbed by women than by men. The real question arising, however, is centred around values. Should this consideration be taken on board or not? Should the statistical observation, possibly based on biology, that women live longer than men, justify them having lower pensions for every year of their lives?

If one sees pensions as a kind of saving and hence as a stock, as practitioners of prefunded pensions naturally would, the most likely reaction would be to retain the links with accumulated assets to the extent possible. This would tend to favour a correction downwards, which in private pensions outside the EU is used to justify gender-specific annuity rates. A longer life would thus seem to argue for *lower* annual rates. If one's point of departure, on the other hand, is social policy, the inclination is to see welfare provisions as compensating for market failures and pensions as fulfilling needs. In this way, living longer would naturally justify *greater* total pension resources as there will be more needs to be met. The social policy viewpoint would also naturally take the position that, if one group of the population systematically lives longer (has a greater longevity risk), then that is simply a reason for this risk to be insured. This is essentially the rationale of the unisex annuity rates, which are adopted across the EU for both public and private pensions. One could, analogously, also point to the established fact that richer people (men and women) live longer than poorer ones; no one is suggesting that rich people's pensions should be calculated using different annuity rates, even if the stock of pension resources they absorb is much higher.

In discussing the origins of inequality in pension outcomes an important distinction that emerges is between outcomes that are due to responses to existing (direct or indirect) incentives and outcomes that are not so justified. For example, women may be enticed towards earlier retirement or lower participation in occupational pensions as a reaction to incentives built in the parameters or structure of pension systems. For instance, private systems may encourage early exit as part of employers' strategies to increase turnover or limit personnel costs. While this holds for both men and women the pressures/incentives for the latter are generally higher. For example, in some cases early retirement incentives were justified with the need to maintain the supply of female carers – chiefly younger grandmothers. When incentives are not set right there is a clear argument to act in order to prevent the emergence of inequalities. Does this mean, however, that those individuals who (for whatever reason) do *not* respond or do not respond fully to the corrected incentives ought to bear the consequences of their choice? Here again, the difference in viewpoint between social policy and savings-based pensions may lead the former to prioritise meeting needs, and the latter to attempt to limit moral hazard and allow incentives to work. Both viewpoints will, presumably, agree to correct in-built incentives so that inequalities are not encouraged and are prevented to the extent possible. They might begin to differ however in how to approach inequities that transpire *despite* the presence of incentives or are due to insufficient or tardy adaptability. Granted that the incentives are put right so that men and women are treated symmetrically, and are allowed to chart their course in an equivalent manner, should that mean that people must live with the consequences of their mistakes? Or, should there be

6 The precise extent of correction might be open to question. Some, though not all, early retirement entails an actuarially reduced entitlement. In any case, average retirement ages have been rising faster for women rather than men, while statutory retirement ages are rapidly being equalised in most countries. An important factor is the tendency of couples to plan their retirement together.

a provision for, after the fact (*ex post*) correction?[7]

This question is a general philosophical issue in social policy, but has particular salience in the case of gender analysis of pensions. Firstly, the very long gestation periods that pension systems involve, which might stretch into decades, imply that there is a long period between causes (decisions) and ultimate consequences; this is quite apart from transition generations who have not been given the opportunity to adapt. Secondly, and more importantly, the premise that incentives have been equalised presumes that all factors entering in the decision have been fully taken into account. However, in the case of gender the calculus of entitlements sidesteps completely the issue of unpaid work in the context of the household, which is disproportionately borne by women. Though by its nature unpaid work does not generate direct pension contributions, it accrues to the overall economy via two main channels. First, unpaid housework and care work contributes to keeping the population healthy and fit to work. Second, private unpaid (care) work is important in bearing and raising of children, and the latter can be thought as 'public goods' in many respects: in ageing Europe higher fertility is key to the growth of the overall economy in the very long term. Translated in the language of economists, this means that unpaid housework does not only contribute to private welfare but produces important benefits (externalities) for the economy as a whole. The problem is that such externalities are not reflected in contributions credited to women and would hence lead to systematically lower entitlements by women.

Therefore an appeal to rationality which is confined to paid labour is necessarily partial as it turns a blind eye to features of life of great importance to women and to features of women's work of great importance to the economy as a whole. Pensions must address and measure up to needs, whilst also not losing sight they are a form of societal saving for old age and hence should maintain close reciprocal links not only with contributions to pension systems directly, but also, arguably, with indirect contributions to efficiency.

What follows discusses key issues in the context of sketching three questions of key importance to formulating policy. Firstly, why not trust the family to solve the question of economic independence without public interference? Secondly, are gender imbalances in pensions a transitory effect that would not characterise the situation when new pension systems operate fully? Thirdly, what can be done for the transition generation?

1.5 Why not leave it to the household? The question of Jointness

The 'traditional' view of pensions held that there is no reason for the State or the pension system to look inside the household. Household members, acting collectively, would take it on themselves to ensure the best possible distribution of cash income. They would do so by apportioning cash resources to needs both of the household as a unit but also of individual members. They would be better equipped to do so as they have more complete information than any outside observer, who should, in any case, not be entitled to intervene. This view thus supports an extreme understanding of jointness in both decisions, in assets and in responsibilities.

7 Ex post correction is what economists call a 'second best' response. In other words given that the first best (full gender equality) is for various reasons prevented, we aim to correct some of the consequences of this inequality. A well-known problem with that reasoning, however, is that correcting after the fact may make the original and underlying problem more entrenched and difficult to change.

There are general arguments rebutting this 'traditionalist' position. It places unrealistically large weight on the benevolence and altruism to the situation inside the family. The household may resemble more a case of (possibly benevolent) dictatorship rather than a utopia of perfect matching of resources to needs. The division of power in real households depends on externally defined gender roles, and is affected by the distribution of cash entitlements among its members – 'who brings home the bacon' matters.

Though this point of view –stated as bluntly as in the previous paragraph – is hardly ever encountered in European discussion, it is still embedded in many pension systems and is referred to as 'the male breadwinner model'. Under this approach, for instance, pay of married men was supplemented by a married person's or family bonus to account for family responsibilities; equivalent supplements to married male pensioners are paid in some social-insurance based systems.[8] This practice inflates gender pension gaps. We can see in what way this works by thinking of how total pension income is split in the case of a household with a non-working spouse. Where the husband receives the supplement, pension gaps will be wider than if the wife receives the same amount as a citizen's pension. If the supplement is a percentage of the pension, this gap will be larger for the richer part of the population.

The question of jointness is especially tested in the cases where the composition of the household is itself open to question. This might happen in two cases, both very important in the issue of gender and pensions.

The first such case is due to the dissolution of the household or the family unit due to separation or divorce. This obviously necessitates a division of rights and entitlements, which in most legal systems implies a clean separation to the extent possible. The natural course this division takes depends very much on the principles guiding the pension system. Pension systems based on individual need have no reason to adapt and will simply apply the given rules to the new situation without change. In savings-based pension systems accumulating stocks of assets, the question arises whether to treat pension accounts in the same way as other property. In that case, in many legal systems, the approach followed is (unless otherwise agreed) to deem that assets acquired during the period of cohabitation are joint property to be divided equally. If so, in the case where individual pension accounts exist, a natural extension would be to add both 'pension pots' and divide equally.[9] Though in actual cases this may be complicated by conditions such as vesting rules and other restrictions, the principle is clear. By treating accumulated pension entitlements as property, the position essentially taken is that paid and unpaid work are of equal value in all cases, in the sense that the households earning potential is attributable to efforts of both partners.

In the case of public, final salary schemes, the situation is made considerably more complex by the nature of the pension entitlement. In such systems entitlements depend on a magnitude which is unknown at the time of dissolution of the household unit. Even if it were known, it would be further complicated by the existence of pension floors and ceilings and other devices implying that the division of a single entitlement in two, may well result in a greater total pension amount. Policy in this field is in a state of flux. Systems relying on complete individualisation of rights

8 Indeed, in some final salary systems, it is in effect paid twice: Once as part of the income to be replaced and once more as a supplement to the resulting pension (which already includes a family supplement).

9 The existence of individual accounts simplifies the treatment of multiple marriages and associations, as the individual account, having been credited, would accompany the individual throughout her life.

may see no reason to adapt; in other countries, the division is up to the courts. The practice is spreading, however, where, even final salary systems adapt the approach of treating pensions as joint entitlements: pension entitlements in the form of pension units earned or pension contribution years accumulated by the two spouses are added and divided equally between them. This would act as a powerful equalising force between men and women if compared with the traditional approach.

The question of jointness arises most painfully in the case of death of one spouse. This condition affects a large number of older women, both due to women's greater life expectancy as well as the tendency (in some countries at least) for wives to be somewhat younger than their husbands. Bereavement is one of the most traumatic experiences that an individual can suffer and has well known repercussions in the medical, psychological and social realms. If these problems were to be associated with a step reduction in financial capabilities, a bad situation would be made worse. Though some of these issues can be addressed by focussed aid at the times close to bereavement, the fact remains that a longer term issue remains about the financial well-being of widows.

The traditional approach, still followed in a majority of member states, includes a survivor's pension as part of the basic social insurance package. In the case where the surviving spouse has no pension of her own, she would succeed to her husband's pension, usually reduced by a percentage to reflect diminished needs. A question arises in the cases where the woman is independently entitled to her own social insurance pension, which in the typical case would be lower. There is a variety of practice, from being able to draw both pensions, having to choose one over the other, or being able to draw part of the survivor's pension if there is another entitlement. Each approach would obviously imply different things about the emergence and persistence of a gender gap.

Pension system practice through Europe ranges virtually through all possibilities. This polyphony belies a fundamental ambivalence about the principles that underlie the question of jointness of pension rights. A needs-based social policy approach defines rights on a current assessment of need. It would thus not need to adapt fundamentally to the case of widowhood; if widows have greater needs (assessed by uniform criteria) they will receive higher pensions. The question arises in the case of maintaining the accustomed standard of living following bereavement. A *fall* in standard of living or (less decisively) a greater risk of poverty on the part of widows would be *prima facie* grounds for concern, in the sense that pension systems are failing as insurance – by not preventing falls in consumption streams – and as social policy –by not preventing widows slipping into poverty, especially if they lack social networks to call on. On the other hand, persisting with social institutions which presume dependence has in many cases proven a powerful force to perpetuate such a dependence. For example, if a woman knows she will be covered by her husband's (better) pension, she will have an incentive to 'invest' in a good marriage rather than to engage in paid work and save for a better pension. We must also factor in the proven tendency for people to make insufficient provision for the future by taking too myopic a stance on future needs, as well as a tendency to postpone decisions on points where there is potential conflict – such as planning ahead for possible bereavement.[10]

Though the jury is still out in the case of jointness, it serves to highlight the issue of

10 In private pensions, for example, there have been cases where one partner's decision not to buy a joint annuity was not communicated to the other.

bereavement and widowhood as a social concern wider than a pension issue. Whatever route is favoured on the existence and size of survivor's pension, this leaves a large number of issues to be tackled independently of pensions.

1.6 Steady state concerns. Will pension gender inequality simply go away?

Many recent pension reforms concern themselves to correct incentives and other parameters responsible for gender pension inequality and in this create a 'level playing field' between men and women. If earnings and pay inequality is also eradicated in paid labour, then the underlying conditions for gender differences in pensions would cease to exist. In that sense, and if policy persists, the pension gender gap will, surely, disappear on its own. Once reformed pension systems settle to their long term condition, gender will no longer be a cause for concern for pension policy.

This rather sanguine view prioritises employment and relies on incentives to solve the sustainability-adequacy conundrum. Once employment is put right and incentives to save more for retirement are in place, women will work more and for longer and at the same time will save more for their own retirement. This will definitely answer the adequacy challenge, as more years of contributions mean bigger pensions. It will also go some way towards answering system sustainability: the potential for increasing paid employment participation and working lives is far greater for men than for women. By dealing with the gender issue, a solution is also promoted for adequacy but also for sustainability. In other words, if women's careers and working lives become more like what men's are today, gender inequalities will in time become a thing of the past.

The key principle in this course of action is reciprocity – a closer linking to entitlements and contributions. This could occur automatically in defined contribution prefunded systems such as those that characterise the second and third pillars. There is an increasing tendency, though, for the same principle to be extended to State-run defined benefit systems. The problem with reciprocity is that it takes whatever inequalities exist in employment and reproduces them in pensions. It is even possible that existing inequalities may be magnified; this would happen if larger pension pots find better fund managers, or if (as has been claimed) women are more conservative as investors. More importantly, in anything other than the very long term, different occupations have varying degrees of access to occupational pillars: being able to access employment-related programmes creates new sources of pension gender imbalance in multi-pillar systems.

Are these mere 'teething problems' that will eventually go away? Is it reasonable to suppose that women will contribute to pension systems in the same way as men do now – i.e. for long and uninterrupted periods with few changes of employers and a steady income stream? The first observation that is due here, is that globalisation and technology appear to move employment *in general* in directions of greater fluidity, and lesser regularity than has been the case in the past. Thus, it is fully possible that, while pension experts are hoping that women's career paths will be more like men's are today, the opposite may, in fact, transpire: men's careers in future may look more like women's work.

Women in accessing paid labour were forced to seek solutions to reconciling work and family life – to a greater extent than men. Their longer periods out of the labour force and greater propensity to engage in part time work are generally related to

problems in coping with caring responsibilities. In this way, ensuring the availability of adequate care facilities acquires especial significance for pension systems stressing individualisation of benefits. It must be noted that ensuring that all women (and men) who want to work can access adequate care services raises issues in social investment, in insurance and on the supply side of services, including the existence of an active quality market for carers, which cannot be relied to appear 'automatically' through the operation of market forces.

Another possible reaction is to accept that women would tend to show gaps in their contribution history and attempt to compensate for them *after the fact*. Thus almost all systems envisage a period of paid maternity (or paternity) leave and in most cases compensate those exercising that right for contributions foregone. This might be *either* in the form of crediting the time involved as having been subject to contributions, and/or crediting contributions in individual accounts or otherwise. This could correct some of the worst repercussions of work interruptions but is unlikely to provide full compensation, especially for individuals at opposite ends of the income distribution; those at the bottom may lack regular contact with the pension system while those at the top may lose more than they are compensated for. Finally, it must be noted that the cohorts of women who have had the opportunity to benefit from this kind of instrument are still far from retirement, so the efficacy of these mechanisms to correct for inequalities in pensions remains untested.

However, the hope that women will in future save for retirement more like men comes up against two realities: Firstly, the presence of unpaid work and its allocation primarily to women. Presumptions that women will start making choices similar to men frequently ignore that women also have to fulfil caring and homemaking tasks, as a matter of course and without pay. What may be a rational response of an individual with no caring responsibilities (or who can delegate them away fearlessly) may no longer be rational if care and unpaid work are put in the picture. Managing care and other responsibilities could well take priority from securing a good pension some decades down the road. Secondly, entrenched gender roles in the economy and society could perpetuate differences between women and men even after the 'objective' conditions for their emergence have cease to be widespread.

As future cohorts of women move through retirement there is good reason to expect that gender differences in pensions may have a tendency not to be as pronounced as they are now. However, it is also true to say that their complete disappearance is equally unlikely.

1.7 Transition issues: what to do with current gender gaps?

Whatever happens once new pension systems mature, it will remain true that for the next thirty years –the length of a generation – pensions will be dominated by men and women for whom gender inequality was a common, if not ubiquitous, experience. The question thus arises: what can be done to correct existing gender pension gaps? This would entail an intervention after the fact – that is after these pensions have been largely determined by years of contributions or even after their pensions are issued.

Some of the considerations that are important for this group have already been mentioned. This cohort in all cases was accustomed to a greater degree of jointness in their financial (and hence their pension arrangements). Systems recognising this jointness explicitly are likely to be friendlier to older cohorts' problems; equivalently

systems stressing individualisation of rights could find that they have forced the social pace faster than these older groups could bear. This could mean that other measures of social policy or other targeted benefits could focus on groups such as widows or divorced women, who may be hypothesised to be more at risk. In particular the time around bereavement could be seen as a time when coordinated actions across different areas of social policy could be particularly efficacious.

The most potent instrument for after the fact gender pension correction are citizens' pensions. These pensions are given as of right to individuals of both genders who reach a certain age (and hence act partly as an incentive to postpone retirement). Women of older ages may have few years of contributions. This either leads to a very small pension or in some cases may fail to meet the minimum vesting requirement (which in many systems is around 15 years' worth) and hence to no pension at all. In those cases being entitled to a small non-contributory pension is an important input in personal independence. Many public systems throughout Europe have a two-tier structure; the lower or basic tier will accrue to all pensioners and would be an important corrective to gender imbalance.

Other devices could also correct pensions by raising the smaller pensions. Chief amongst these is a minimum pension, which can act as a powerful equalising force. However, depending on its height, it might also have very negative side effects: With a high minimum, people with different contribution histories will be entitled to the same amount. This would encourage disaffiliation from the systems and contribution evasion, especially for the self-employed and for carers, as well as giving incentives to early retirement. An important distinction is whether pension minima (and the top up between the actuarially fair pension and the one received) are given unconditionally or are dependent on other social inclusion considerations, such as taking into account other family income. In any case, devices such as minimum pensions can be expensive in public finance terms, as they would most likely need some source of finance additional to contributions (if the minimum is not included in the actuarial calculation).

The fiscal implications of after the fact interventions to correct for low pensions, such as pension floors or two-tier basic pensions, could introduce a direct trade-off between pension adequacy and pension sustainability. As long as this intervention is limited to low pensions and is justified in terms of social inclusion, it may not imply any additional burdens on public finances, as these would have already been factored in. A conflict may exist if unconditional minima affect women in better-off households, i.e. households sufficiently well off not to justify extra help. In this case, an unconditional minimum would reduce gender differences, but may not be justifiable on social inclusion grounds. In doing so, however, it would implicitly introduce an additional trade-off between gender balance and sustainability. If there is competition for funds to devote to boosting lower pensions, it could also be thought of as a trade-off between gender balance and pension adequacy. It must be stressed, finally, that though minimum pensions have an important gender dimension, this is almost never made explicit.

Actions to correct gender imbalance in the transition generation need not necessarily imply the expenditure of public funds. Of possibly greater importance in the medium term is the design of pension reforms. Women comprise frequently the group of the population who have to change their behaviour to the greatest extent. It is women's minimum retirement ages that have risen most, whilst moving towards individualisation of pensions affected women This implies two things: Firstly, pension reforms need to identify groups (such as survivors' pension or divorced

women) who may be affected and design appropriate transition or compensatory arrangements. Secondly, given that virtually all pension changes require forward planning, adequate time should be given to individuals in order to adjust. Equally important is to give alternative solutions to people who must alter their choices or who are otherwise 'caught out'.

It is in this field that a cautionary note can already be mentioned. In pension systems relying on multiple pillars, the separate pillars are supposed to supplement each other and fill in any gaps. In particular, the third (personal) pillar should, in principle, provide an answer to individuals who are less well served in the occupational pillars. If this supplementation function was operative, we would expect to see greater prevalence of third pillar personal pensions where second pillar pensions are not as widely supplied. However, the picture we see in almost all cases in multi pillar systems is that the personal pension industry concentrates on higher income individuals who are already well covered by occupational pensions and by other savings products. In contrast, there is little evidence that those women who have limited access to occupational pensions can and do turn to personal pensions to make up the gap. This might be due to failures on the supply side or the existence of fixed costs; however it may be, it remains true that in the case of women multiple pillars frequently reinforce inequality in access rather than correcting it.

The possibility of private pillars to favour inequality is increased if we consider problems arising on the demand side –i.e. in how individuals make use of available opportunities to plan their retirement. There is mounting evidence that low financial literacy in the population at large and among women in particular, plays a very significant role in outcomes. The complexity and opaqueness of pensions alienate most people who may either postpone choosing or decide on limited information they later regret. Thus, unless greater emphasis on individual choice is not accompanied by improvements in financial literacy and by a conscious attempt to simplify systems, benefits may be slow to come, while inequality will almost certainly increase.

1.8 Putting the picture together: gender, adequacy and sustainability

Economic independence of men and women adds information to the twin objectives of pension adequacy and pension sustainability. Having an independent source of income adds to human capabilities and allows the greater exercise of freedom.

The possibility of being able to balance pension sustainability and adequacy has a definite gender dimension. Women are the group of the population who have the capacity to improve, in some cases dramatically, the sustainability outlook in ageing societies; increasing women's participation in paid labour is the single largest untapped resource which can bolster pension systems. This response could be sought at all points in the labour market. Younger people can be helped to enter the labour market; mothers can maintain more active links with employment; women can be encouraged to work longer; finally, it is women who in most cases supply the caring services that allow other women greater freedom to choose. Greater involvement in employment will generate the production to support the increasing number of aged dependents. Additionally greater (paid) labour input on the part of women will be the most potent long term answer to the problem of poor older women with low pensions. If, however, more paid labour on the part of women comes at the price

of less overall resources devoted to care work (paid and unpaid), what is gained in terms of financial sustainability from a more supporting tax and pension system may be lost in the longer run through lower fertility or physical and intellectual fitness of the population. A pension system that encourages women's work without compromising total care resources is a win-win solution.

Conversely, encouraging early retirement turns a potential solution into a certain problem. Encouraging women to enter retirement earlier (whether directly or indirectly) yields very dubious benefits. However, it is certain to exacerbate both sustainability (as those women will have to be supported for longer) and adequacy issues (as today's early retirees will be tomorrow's poor pensioners).

Coming to grips with the gender aspects of pensions is thus not a luxury, but can hold the key to both long term fiscal and long term social problems. Nevertheless, this survey has shown that to do so, requires much hard thinking and a good many policy choices. Ageing implies that the world of retirement is increasingly peopled by women. Globalisation means that production and employment place a premium on flexibility and adaptability, and favour career patterns far removed from those of male breadwinners with steady jobs. So, both needs for pensions and financing of the pension system are evolving in what may be called 'feminine' directions. In contrast, reformed pension systems themselves stress features like reciprocity which require long uninterrupted careers if they are to lead to an adequate pension.

The apparent tension between the *desiderata* of the pension system and the realities of society and production can be resolved if gender and the specific issues faced by women are more closely weaved in the mesh of pension systems. This consideration in the majority of cases does not imply the existence of trade-offs between economic independence and the pension system objectives of sustainability and adequacy. On the contrary, gender and economic independence, if handled appropriately, may even prove a lever to reconcile existing trade-offs.

PART 2: The Gender Gap in pensions: facts and figures

2.1 Introduction

In order to complement and enrich the ongoing assessment of the adequacy of national pension systems, it is important to bring into the picture in an explicit manner the question of gender – the different outcomes that men and women end up with through the operation of pension systems. The following section investigates how to incorporate the way pension systems treat men and women in a quantitative discussion of pension adequacy. In more technical terms it tries to define and to examine a context indicator of pension gender gaps in the EU member countries.

2.2 The definition of a pension gender gap

An indicator is a construct halfway between the worlds of policy discussion and that of data. An indicator tracking gender imbalances in the field of pensions should:

- be easily understood
- be available on an annual basis
- be available and comparable across countries, and
- it should also complement existing indicators in current use.

The EU Commission in a report published in 2013 (Bettio, Tinios and Betti, 2013) has explored the issue and investigated a pension gender gap indicator for the EU. A key consideration in that approach was to mirror to the maximum extent the approach familiar through applications to employment- i.e. to match the earnings gap and participation gap indicators. This report builds and extends that approach by applying it to the latest statistical information.

Following the earlier report, but also the practice of most structural indicators in the field of inclusion, the pension gender gap indicator uses EU-SILC data. It is calculated using the EU-SILC wave conducted in 2012 which refers to 2011 incomes. This ensures coverage for all EU member states, as well as a five-year run of comparable data from 2008[11] for analysis over time. EU-SILC has detailed questions on pensions as an income source. It covers all public pensions and further distinguishes individually negotiated (3rd pillar) pensions.

To define an indicator it is important to mirror to the extent possible indicators in employment –where a key distinction is between a gender gap in earnings for those working and a participation gap of the extent of involvement in the labour market.

11 Though EU-SILC data coverage starts in 2005, full comparability of pension information is ensured from 2008 on.

Similarly, in the case of pensions we distinguish between two issues: *pension system coverage* and *relative pension generosity*. The latter is defined as a pension gap between men and women among those *who are entitled to* a pension.

So, the Gender Gap in Pensions is computed in the simplest possible way, by comparing average pensions of men and women: It is one minus women's average pension income divided by men's average pension income. To express this as a percentage the ratio is multiplied by 100. In other words, it is the percentage by which women's average pension is lower than men's (Box 1).

In parallel with employment we define two linked indicators, separating the issues of '*who gets a pension*' and '*what is the difference between men and women*':

1. **The coverage gap** –that is, the extent to which more women than men do not have access to the pension system (in the sense of having zero pension income— as that is defined in EU-SILC).
2. **The pensioners' pension gap**—or else "*the*" pension gap, that is, the difference in pensions *excluding* non-pensioners. This measures how the pension system treats "its own beneficiaries", that is, excludes those with no active links with pensions.

If we include in the pension average calculation individuals with zero income, i.e. if we base the calculation on the total population *including non-pensioners*, we arrive at an alternative indicator which combines both indicators—which can be called the "**elderly pension gap**" in the sense that it includes in one indicator all people over 65.

A number of technical issues arise. The first is the question of who is a pensioner. An individual may draw a pension but may not think of him/herself as a 'pensioner'. Defining a pensioner as anyone entitled to a pension gets round this issue and also refers in principle to the same population covered by administrative data published by pension providers. In terms of EU-SILC this means any individual identified as drawing a sum of money which is identified as a pension, irrespective of other characteristics.

BOX 1. The (mean) Gender Gap In Pensions

We define the mean Gender Gap in Pensions as:

$$\left(1-\frac{women's\ average\ pension\ income}{men's\ average\ pension\ income}\right) x\ 100$$

The definition of *women's* and *men's average pension income* rests on the following choices and assumptions:

1. We consider the subsamples of individuals in the EU-SILC (UDB p-file) who are 65-79 or 65+ years old at the beginning of the income reference period (t-1) of the EU-SILC wave concerned (t).

2. From 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).

3. By denoting "F" the women in subsample (2), and "M" the men in subsample (2), the Gender Gap in Pension can be rewritten as:

$$\left(1-\frac{\frac{\sum_{i:1}^{F}(PY080G_i+PY100G_i+PY110G_i)\,w_i}{\sum_{i:1}^{F}w_i}}{\frac{\sum_{j:1}^{M}(PY080G_j+PY100G_j+PY110G_j)\,w_j}{\sum_{j:1}^{M}w_j}}\right) x\ 100$$

where w_i is the personal cross-sectional weight of female *i* (SILC variable PB040), and w_j is the corresponding weight for male *j*.

The *second* issue involves the scope of the comparison – which groups to focus on within the broad group of pensioners. The simplest solution, adopted by the 2013 report and other work, is to focus on individuals older than 65. This is the conventional age cut-off favoured by demographers, and by that age the transition to retirement is all but complete in all EU member states.

If we are interested in pension adequacy as a systemic feature, we must be focussed on effects linked to the operation of the pension system. This has bearing when examining individuals in what is frequently known as the 'oldest old' age group –i.e. people older than 80. Pension issues for that group may have been decided decades earlier and would reflect features that may have ceased to apply. Moreover, important issues of well-being for that older group depend less on the pension system *per se*. For instance, increasing frailty may lead many older individuals to need long-term care and possibly to move to old age homes, while it may lead others to co-habit with their offspring; these practices affect different countries in different ways and could bias results in unpredictable ways. Thus, economic independence for older groups depends on factors other than pensions –the state of health, access to long term care and to support networks being the most obvious. For this reason and for the purposes of this report, whilst not neglecting the overall pension gap referring to all individuals older than 65, we look in greater detail into what may be called the 'inner group' of older people, that is people between 65 and 79. We thus may distinguish the '**overall gender pension gap'** referring to the over-65 groups and

the **'central gender pension gap'** referring to the more homogeneous group of people aged between 65 and 79 years of age. The central gap has a further advantage of being less sensitive to impacts from the death of spouses and survivors' pensions.

Starting to monitor a new indicator is bound to uncover a number of statistical and technical issues. These, after being identified, may lead to corrections and improvements in the underlying data. A number of such questions can be mentioned, some or all of which may affect computations for specific countries. Possibly the most important consideration has to do with sample size. Small sample size gives rise to instability of statistical estimates; this instability will be more visible when computed gender gaps are small. In such cases we may not be surprised to see year-on-year changes arising due to technical issues and unrelated to underlying changes. Similarly, small sample sizes (a feature more common in smaller countries) hamper exercises based on sub-samples. A further technical issue is conceptual. The definition of 'who is a pensioner' can be expected to be sensitive to the question of 'what is a pension'. In particular, if EU-SILC classifies as a pension a social benefit directed towards older people this will affect both computed coverage and gender pension gaps. These, and possibly other issues, are only to be expected when an indicator is first used; in similar cases definitions have been fine-tuned and technical issues addressed.

A context indicator to be used at the European level must rely on survey evidence, such as that from EU-SILC. Such surveys can be fine-tuned with a mind to comparability and allow consistent benchmarking across member states with very different systems. In doing so, they raise the issue of how they are related to administrative data which are typically produced as a side-product of the process of paying out pensions. Sample surveys which are from the outset focussed on individuals and households have an advantage over most administrative data in not having to face the perennial problem of reconciling the natural unit of reference of administrative systems, legal entitlements, with the individual beneficiaries. An individual could have two or perhaps more legal entitlements which may arrive from different sources; such might be the case with survivors' pensions, but also with multi-pillar systems. Administrative data frequently have a problem in matching entitlements to individuals. On the other hand, administrative data rely on actual payments and hence frequently have the edge over sample surveys that rely on recall. Some countries, most notably Denmark, have dealt with this issue by allowing sample surveys access to administrative data such as income registers. This solves the issue for an individual country and ensures that conflicting estimates are not produced, as well as eliminating one source of error. However, unless all countries are able to proceed along the same route, this correction for one country might actually make the data *less* comparable for the purposes of benchmarking one country against another.

The issue of how administrative data compares to sample estimates was examined in some detail for a sub-sample of 9 member states by Bettio et al. (2013, chapter 3). They found that, though in certain cases administrative data are not far from EU-SILC estimates, in other cases this is less so; in some other countries there were no gender pension statistics at all. A particular problem was the difficulty in producing cross-tabulations and looking at particular issues in detail. A further issue was faced in systems with a multiplicity of providers where population-based statistics were very hard to come by.

In conclusion, using comparable data such as the EU-SILC is the only feasible choice

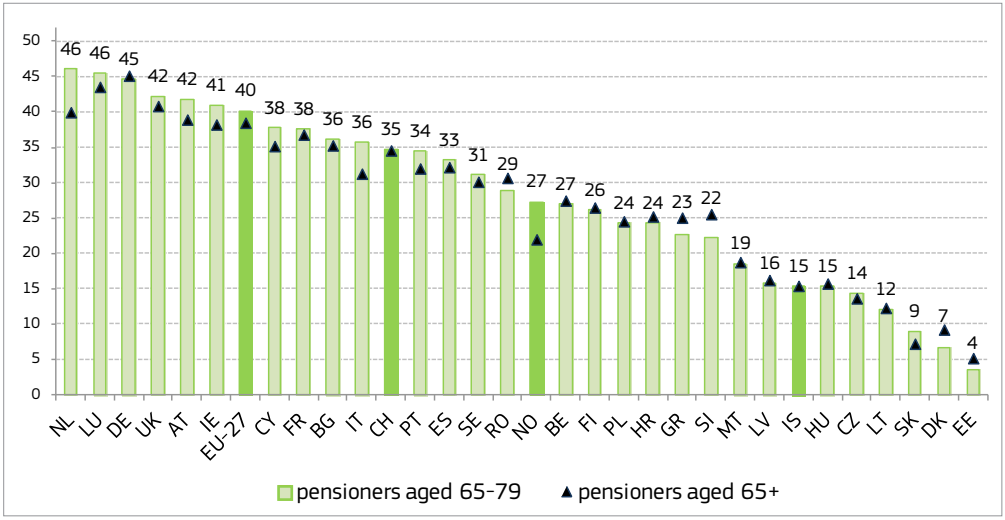
if the objective is to examine gender pension inequalities throughout Europe. This is not to deny that for individual countries administrative data may be more useful in a country application. What needs to be happen is to initiate a structured dialogue where a possible discrepancy is first identified and this leads either to refinements in administrative data or improvements in either the questionnaire or the sampling design.

This part of the report purports to examine and presents the picture of pension gender gaps in the EU member states using the latest available information. It aims to derive, where possible, a number of 'stylised facts' that the formation of policy must take notice of. It starts by characterising the situation in the last year available, that for 2011 incomes. It then proceeds to ask whether any time trends are discernible, benchmarking developments relative to the last pre-crisis year, 2008. The next two sections examine how pension gaps are related to individual and population characteristics. Given the complexity of influences that are brought to play, the emphasis is squarely on describing the statistical picture, leaving speculation as to causal and policy factors to the concluding section.

2.3. The headline indicator: the central pension gender gap in 2012

Using EU SILC data for 2011 incomes (given in the 2012 run of the survey), Figure 1 plots the **central gender pension** gap across the EU – i.e. how far women's pension lag behind men's for pensioners in the central age groups, aged between 65 and 79. This for the purposes of this report may be thought as the 'headline' indicator. For purposes of comparison, the figure also presents the overall pension gap for the entire over 65 pensioner population, which was the focus of the 2013 EU report (Bettio et al., 2013). Figure 1 portrays results for all countries in EU-SILC, that is the twenty-eight EU member states as well as Norway, Iceland, and Switzerland. Croatia was first included in EU-SILC in 2011.

Figure 1: Gender Gap in Pensions (%), 2012, pensioners aged 65-79 years vis-à-vis 65+



Source: EU-SILC 2012, own calculations. In BE and IE figures are based on 2011 data.

Taking the EU-as a whole, men on average are entitled to pensions which are greater than those of women **by forty per cent**.[12] The EU average is calculated on a population-weighted basis and is consequently heavily affected by the gap of the more populous countries –Germany and the UK most notably. Countries are found in a continuum, with the highest value at 46 per cent all the way to the lowest, virtual parity (4%). The widest difference is observed in the Netherlands (46%), followed by Luxembourg (46%). Germany, the UK, Austria and Ireland are above the average. A relatively large group of countries have values exceeding a third (Cyprus, France, Bulgaria, Italy, Portugal, Spain), while others are around, at, or a little below 30% (Sweden, Romania, Belgium, Finland). It is thus true to say that in 12 of the 28 Member States, women lag behind men by more than a third.

Gaps for Poland, Croatia, Greece and Slovenia are around a quarter. Lower, though still sizeable values are found for Malta and Eastern European countries: Latvia (16%), Hungary (15%), the Czech Republic (14%). At the other extreme below ten per cent, i.e. close to parity, are only three countries: Estonia, as in the 2009 data, is 'top of the class' –since women's pensions are lower by only 4%. Denmark at 7% and Slovakia at 9% follow.[13]

The *overall* pension gap (that pertaining to the entire population of people over 65) is slightly lower –the EU27 average is 38, rather than 40 per cent. This small difference arises from larger divergences in a few countries. The Netherlands has the largest discrepancy, where the overall gap is some six per cent lower (40 rather than 46 per cent). Other countries with sizeable differences are Italy (31 rather than 36 per cent) and Norway (22 vs. 27 per cent). In the vast majority of cases the central gap is higher by one or two percentage points. However, in two cases the central gap is clearly *lower* than the overall gap: Greece (25 vs. 23 per cent) and Slovenia (26 vs. 22 per cent). In Denmark and Estonia (where observed gaps are very low) the same feature is probably due to statistical factors.

In order to understand the source of the discrepancies between the central and overall gaps, it is important to consider whether they are caused by sampling factors, or whether they are a feature of pension systems. The former would be the case if, for example, the share or gender composition of the population excluded by focussing on the central population (or else by 'censoring' the older group) is very different from one country to the other (which could be caused by differing longevity). Table 1 examines this question by looking at how the central pensioner population is related to the entire population of pensioners over 65. The excluded group of pensioners is 26 per cent in total, affecting women (29%) proportionately more than men (22%), a feature reproduced everywhere. The country where the largest exclusion occurs is Spain (32%) and the smallest Malta (5%) -probably due to its immature pension system. Though the countries covered have different demographic profiles, the extent of 'censoring' caused by excluding older individuals is unlikely to explain the observed, highly localised, differences in the computed gaps.

The gender gap in pensions, as here defined, essentially compares each person to

12 To aid comparisons and to limit confusion when comparing data from previous years when Croatia did not participate in EU-SILC, we use EU27 throughout. Given population weighting, however, the EU28 average is little different from the EU27.

13 As an example of the issues that may be raised by survey data, particularly when the gap is low can be seen for Denmark. Danish data allow the pension gap to be computed by using income register information, which can be compared to the income gap as derived by replies to the survey of the same individuals. The estimated gap using administrative data for the same individuals was 13.2 per cent as opposed to 7.0 per cent using their own replies in the survey.

the society's average. If rich men's wives have not worked or have few years of contributions, the distance between the two average pensions will be such as to magnify the gender gap (i.e. the gender gap will be affected by extreme values). At the other end of the distribution, given the uncertainty of what is a 'pension', it is possible that, in some countries, statistics may include a large group with entitlements to small benefits. If these benefits are classified as pensions, this would add many small values to the population included in the indicator. Thus, we must be aware of distortions caused both by larger outliers but also by smaller numbers.

Table 1: Age composition of 65+ pensioners, by gender, 2012

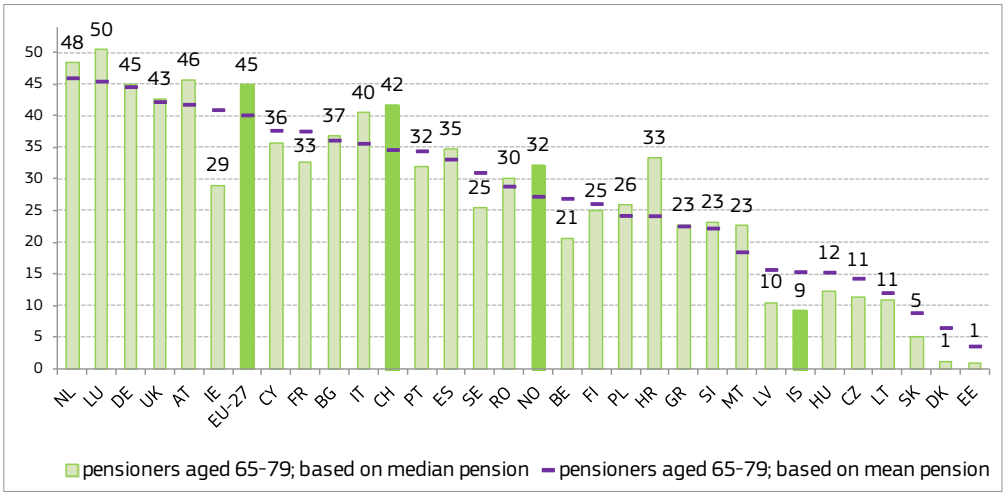
2012	Composition of Total 65+ pensioners		Composition of Male 65+ pensioners		Composition of Female 65+ pensioners	
Country	65-79	80+	65-79	80+	65-79	80+
EU-27	73.7	26.3	77.5	22.5	70.7	29.3
EU-28	73.8	26.2	77.6	22.4	70.8	29.2
ES	67.6	32.4	73.8	26.2	61.4	38.6
IT	68.4	31.6	75.2	24.8	62.9	37.1
NO	69.6	30.4	73.5	26.5	66.5	33.5
FR	70.0	30.0	74.2	25.8	66.8	33.2
UK	70.3	29.7	74.3	25.7	66.9	33.1
SE	70.9	29.1	74.6	25.4	68.0	32.0
FI	71.7	28.3	77.7	22.3	67.4	32.6
IS	71.9	28.1	74.0	26.0	70.1	29.9
BE	72.5	27.5	77.6	22.4	67.9	32.1
GR	72.7	27.3	75.7	24.3	70.0	30.0
PL	73.3	26.7	78.0	22.0	70.4	29.6
PT	73.5	26.5	75.3	24.7	72.2	27.8
EE	74.4	25.6	78.5	21.5	72.4	27.6
NL	75.0	25.0	79.3	20.7	71.5	28.5
AT	75.2	24.8	79.3	20.7	71.8	28.2
SI	75.7	24.3	77.3	22.7	74.7	25.3
LV	75.9	24.1	81.6	18.4	73.2	26.8
IE	76.1	23.9	79.4	20.6	72.7	27.3
LT	76.4	23.6	81.2	18.8	74.1	25.9
DK	76.6	23.4	79.6	20.4	74.2	25.8
CZ	76.6	23.4	78.6	21.4	75.2	24.8
BG	76.9	23.1	78.9	21.1	75.6	24.4
RO	77.0	23.0	79.1	20.9	75.5	24.5
CY	77.6	22.4	80.3	19.7	75.4	24.6
HU	78.1	21.9	79.5	20.5	77.4	22.6
LU	78.4	21.6	80.1	19.9	77.0	23.0
HR	79.0	21.0	83.6	16.4	75.8	24.2
CH	79.2	20.8	80.9	19.1	77.8	22.2
SK	80.7	19.3	82.4	17.6	79.6	20.4
DE	83.1	16.9	83.8	16.2	82.5	17.5
MT	95.4	4.6	97.1	2.9	93.4	6.6

Source: EU-SILC 2012, own calculations. In BE and IE figures are based on 2011 data.

One common answer to the issue of large extreme values is to focus on the middle individual –i.e. to use the median rather than the mean for comparisons. If, on the other hand, there is an issue or uncertainty about identifying a large group of individuals as pensioners at the lower end, this is likely to affect the identity of the middle individual and would bias the result if a *median* is used. Whilst this issue is not settled, this report follows the usual practice in computing earnings gaps, and gives prominence to the mean and *not* to the median gap. However, in order to fix ideas, Figure 2 reports the central pension gap based on median pensions, together with those based on the mean. In order to facilitate comparisons with the headline (average), the sequence of countries based on Figure 2 is preserved for all subsequent analysis –i.e. all presentation are sorted by order of the headline gap.

The EU27 estimate based on the median is larger in comparison with the mean (45 as opposed to 40 per cent).[14] The classification of countries into four groups is largely preserved: in 16 countries the gender gap in pensions based on mean pension income does not deviate by more than 4 percentage points from the mean. For example in the UK and Germany there is practically no difference. Nevertheless, there are notable divergences: Ireland has the largest difference, going from 41 to 29 per cent. Similarly in Belgium, Sweden, France, Latvia and Slovakia, the gap based on medians is lower. By contrast in Croatia, Luxembourg, Italy, Austria, the Netherlands and Malta it is *higher*. Though these divergences are certainly noteworthy, the overall impression – the stylised facts – of widespread inequality on the one hand and of considerable dispersion on the other, remain.

Figure 2: Gender Gap in Pensions (%) based on median and mean pension income, 2012, pensioners aged 65-79



Source: EU-SILC 2012, own calculations. In BE and IE figures are based on 2011 data.

Women's pensions are certainly lower than men's pensions. At the same time, pensions across Europe may be higher or lower *in absolute terms*, but also relative to the productive capacity of a country depending on how rich or poor a country as

14 The EU27 median treats all observations as belonging to a single population and reports pensions for the middle man and the middle woman. The alternative of computing a 'mean of median values' yields a lower value – at 39.9 per cent that is identical to the EU27 *mean*.

a whole is, or how its social protection system is structured. In other words, it is important to have an idea of the absolute magnitudes which lie behind relative figures. Table 2 sets out the values (in Euros) of average monthly pensions for men and women for our target central population. It also notes what percentage this is of GDP per capita and of the at-risk-of-poverty threshold for a household with one member for each country.[15] The variation (as expected) is enormous, with the lowest pension for women being in Bulgaria (112 EUR/month) and the highest in Norway and Luxembourg (more than 2100 EUR, more than twice the EU average). Women's pensions tend to be between a quarter and a half of per capita GDP. Only in Bulgaria are *mean* women's pensions insufficient to take a single person out of poverty.

15 The threshold is defined as 60% of median equivalised household income.

Table 2: Mean Value of Annual Pension Income of Men and Women aged 65-79

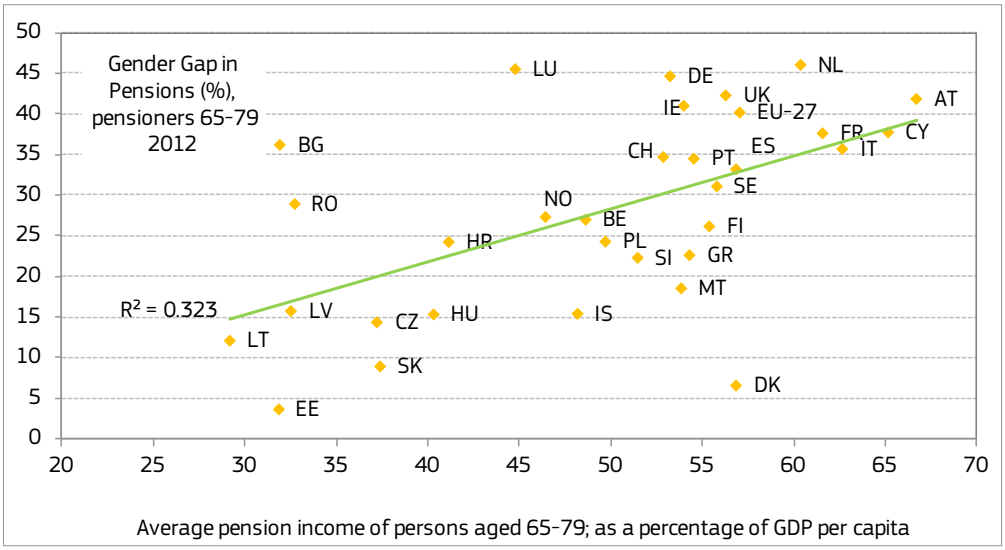
Mean Value of Annual Pension Income of Men and Women aged 65-79						
Pensioners 65-79	***Mean** monthly value of pension income*		***Mean** Annual Pension Income as (%) of 2011 GDP per capita*		***Mean** Annual Pension Income as (%) of 2011 National Poverty line*	
Country	Men	Women	Men	Women	Men	Women
NL	2,383	1,286	80	43	232	125
LU	3,970	2,164	59	32	242	132
DE	1,846	1,022	69	38	188	104
UK	1,696	979	72	42	178	103
AT	2,540	1,477	85	50	233	135
IE	1,945	1,147	67	40	197	116
EU-27	1,530	915	73	43	187	112
CY	1,424	887	81	51	168	105
FR	1,981	1,236	77	48	192	120
BG	176	112	41	26	123	78
IT	1,654	1,064	76	49	206	133
CH	3,278	2,141	65	43	166	109
PT	908	595	68	44	218	143
ES	1,269	848	67	45	212	142
SE	2,283	1,574	67	46	185	127
RO	213	151	39	28	201	143
NO	3,224	2,344	54	39	161	117
BE	1,527	1,116	56	41	153	112
FI	1,885	1,392	65	48	166	123
PL	465	353	58	44	184	139
HR	409	310	48	36	151	115
GR	954	738	61	47	201	155
SI	874	679	60	46	144	112
MT	786	641	59	48	137	112
LV	296	250	36	31	134	113
IS	1,380	1,168	52	44	143	121
HU	368	312	45	38	155	131
CZ	500	429	41	35	128	110
LT	269	237	32	28	124	109
SK	422	384	40	36	122	111
DK	2,120	1,982	59	55	160	149
EE	329	317	33	31	110	106

Source: EU-SILC 2012, own calculations. In BE and IE figures are based on 2011 data.

Do countries with higher *absolute* pensions tend to have higher gender imbalance? This is what one would expect were pension systems designed to give priority to greater needs; pension systems would focus on other objectives only after those needs are met. This question is approached by relating a measure of pension generosity (average pension income of individuals 65+ as a percentage of GDP *per capita*) with the pension gap of Figure 1. The result appears in the form of a scatter

plot in Figure 3. The hypothesis finds some corroboration in the form of a positive relationship; richer countries like Austria, the Netherlands and Germany have higher gender gaps. However the relationship is weak and leaves much dispersion around the trend line (R^2=0.323).

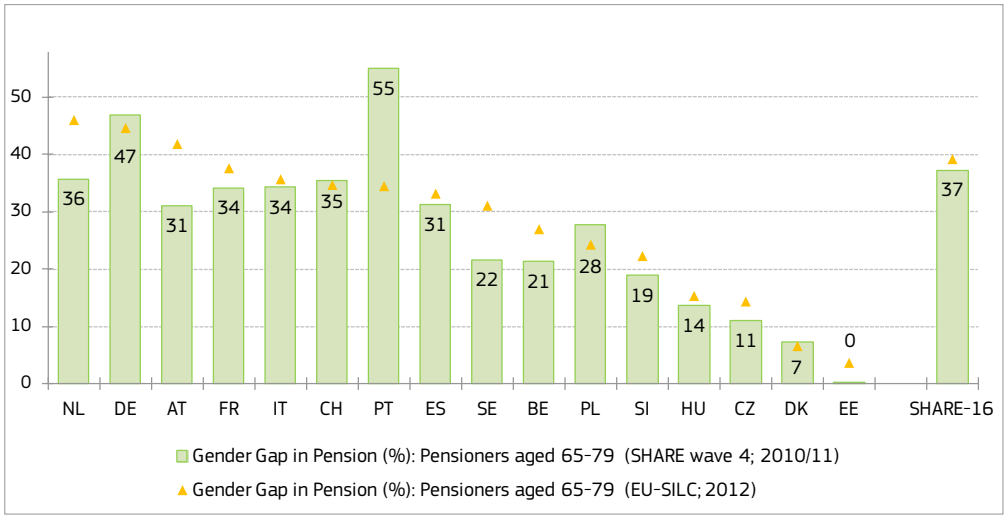
Figure 3: Plotting the Gender Gap in Pensions against Pension Generosity, 65-79, 2012



Source: EU-SILC 2012, own calculations. In BE and IE figures are based on 2011 data.

Data derived from the EU-SILC comprise the bulk of the analysis. However, it is important to cross-check this information against other data sources. Data drawn from SHARE (the Survey of Health, Ageing and Retirement in Europe) may be used to supplement the picture emerging from EU-SILC. It is thus important at this stage to compare the results of the two sources and to be aware of their key differences. The fourth wave of SHARE was conducted in 2011 and so focusses on the same year as the SILC information used. Figure 4 compares SHARE wave 4 data, with equivalent EU SILC data for the 16 countries that participated in SHARE for that year.

Figure 4: Gender Gap in Pensions: Evidence from SHARE vis-à-vis EU-SILC, 65-79



Source: EU-SILC 2012 and SHARE (Survey on Health, Ageing & Retirement in Europe), wave 4.

The first thing to note is that though the overall gap computed is very similar there are notable divergences between the sources.[16] The widest and most difficult to explain is that of Portugal, where SHARE information lead to a gap estimate of 55 per cent.[17] In most other countries the difference is in the opposite direction (lower gaps in SHARE), such as in NL, AT, SE, BE; in others the two sources almost coincide (IT, DE, CH, HU, DK). Discrepancies could be due to a different definition of income; or to the inclusion of alternative or supplementary pension sources, possibly thanks to a more detailed pension questionnaire. However it may be, the differences between SHARE and EU-SILC are *not* such as to preclude SHARE as a supplemental source of information. SHARE information, moreover, does not contradict the 'big picture' emerging from EU-SILC.

To begin answering the key question of interest 'how wide is the pension gender gap?', one needs a point of comparison. In the case of pensions, one obvious yardstick is the gap in annual earnings -i.e. differences between men and women in paid labour remuneration. Pensions replace employment income when that ceases at an older age, so the comparison is to some extent a natural one to make. At the same time it must be noted, that the earnings gap conceptually is very different from the pension gender gap. The pension gender gap looks at how differences in men's and women's prior work lives (formal and informal) produce different *annual*[18] pension entitlements -after having been filtered through national pension systems. Moreover, it should of course be noted that today's gap in earnings and

16 Bettio et al. (2013, p 40) compared wave 2 (2007) SHARE with SILC. Most of the discrepancies appear to be systematic in the sense that the relationship of the two sources in the two years is similar, with the exception of SE and ES. Portugal was not part of SHARE in wave 2. Greece did not participate in wave 4, whereas it had supplied data for previous waves.

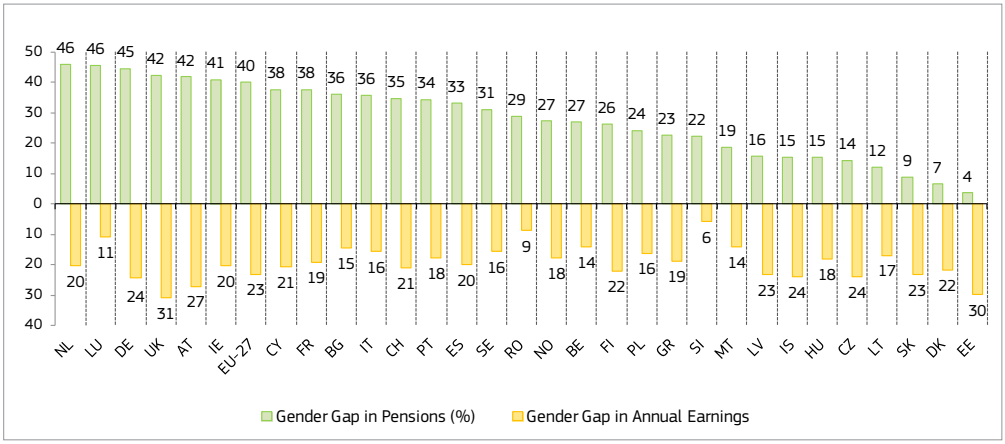
17 Though the average pension for men is similar for the two sources, that of women is much lower in SHARE.

18 If instead one tried to measure gender differences in 'pension wealth', i.e. the total sum of pension income women and men receive over retirement, the gap between men and women would most likely be significantly lower since women would tend to retire before men (including because of lower pensionable ages for women in many MS) and on average across the EU live about three years longer.

today's pension gaps refer to different groups of *people*. If evaluated *today*, pension gaps reflect average income sources of a different *generation* than the one currently earning income in the labour market.[19] Nevertheless, in order to grasp orders of magnitude, it is important to see how the two gaps compare. Figure 5 juxtaposes the headline pension gap with the latest available Gender Gap in Annual Earnings, based on the European Structure of Earnings Survey for 2010. Though the data do not refer to the same individuals nor to the same year, it is legitimate to contrast the earnings gap with the pension gap, in order to gauge orders of magnitude.

A first observation is that pension gaps are generally wider than earnings gaps: the average gender gap in earnings for the EU27 is 23%, two fifths lower than the pension gap (40%). Given that women work fewer years we would anticipate an even *wider* career earnings gap. It is the latter earnings concept that most pensions systems base the pension calculation on. A large difference between earnings and pension gaps is thus only to be expected. However, there appears to be no simple relationship linking the two indicators. The country with the second widest gender gap in earnings (Estonia, which also has the lowest hourly pay gap) is the one with the lowest *pension gap.* This kind of coincidence is not infrequent in Eastern Europe where low pension income favours greater equality at the bottom between men and women, but it can also be found in two Nordic countries (Denmark and Finland), albeit to varying extent. Overall, the dispersion in earnings gaps appears to be lower than that for pension gaps.

Figure 5: Gender Gap in Pensions vis-à-vis Gender Gap in mean Annual Earnings



Note: The Gender Gap in Pensions refers to pensioners aged 65-79 and is based on EU-SILC 2012 data. The Gender Gap in Annual Earnings is based on the Structure of Earnings survey 2010 data.

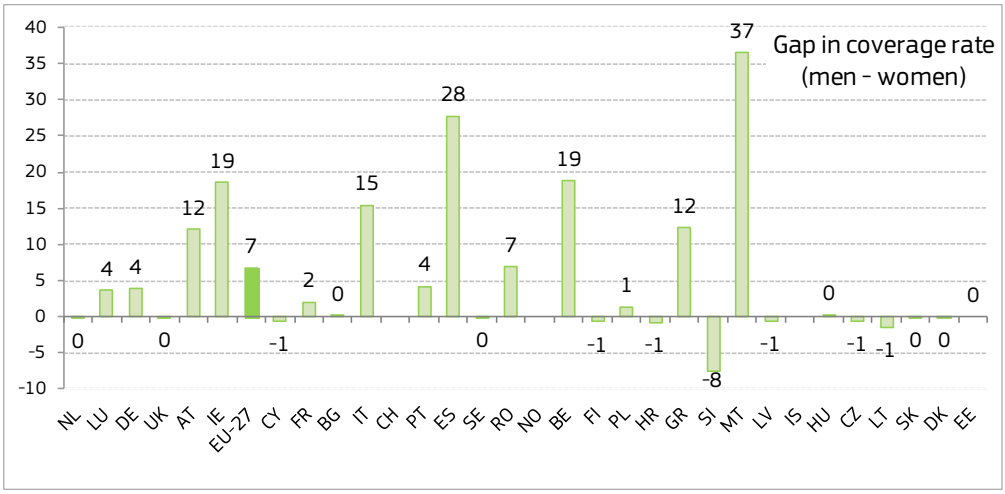
A key characteristic of a pension system is its **coverage**: whether some people are entitled to a pension, or not. In those pension systems that include an age pension, paid to all citizens past a certain age, the gender gap in coverage will be small or zero. In contrast, we might expect coverage gaps emerging in social insurance sy-

19 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 1930). 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.

stems 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 (for instance in Belgium, or in Greece). In the latter case, we might expect to see a large coverage gap to be associated with a *larger* pension gap and even greater gap if zero pensions are included (Figure 6).

In the majority of member states the access of men and women to pensions is equal and coverage gaps negligible. (The large negative gaps for instance in Slovenia may be due to classification issues of disability pensions). Small coverage gaps may also result where individuals may be entitled to very small amounts; as long as these are classified as pensions the methodology adopted here would lead to low gaps. This could lead to misunderstandings, if the individual beneficiaries themselves do not think of themselves as pensioners.[20] However, in countries relying on the social insurance paradigm (i.e. contributions based on earnings from paid work) coverage gaps can be very wide. This holds above all in Malta, where women who have access to their own pension are fewer than men by 37 percentage points. Other countries where a fifth or more of the female population is without pension access are Spain (28 percentage points), Belgium (19 percentage points) and Ireland (19 percentage points). Italy, Austria and Greece are also cases where coverage gaps are above ten percentage points. In some of these systems married women would typically not be entitled to their own pension, or would not meet the criteria for a social pension; a common alternative in those cases is for men to receive a married persons' pension supplement instead.

Figure 6 : Gender Gap in pension coverage rate, persons aged 65-79, 2012



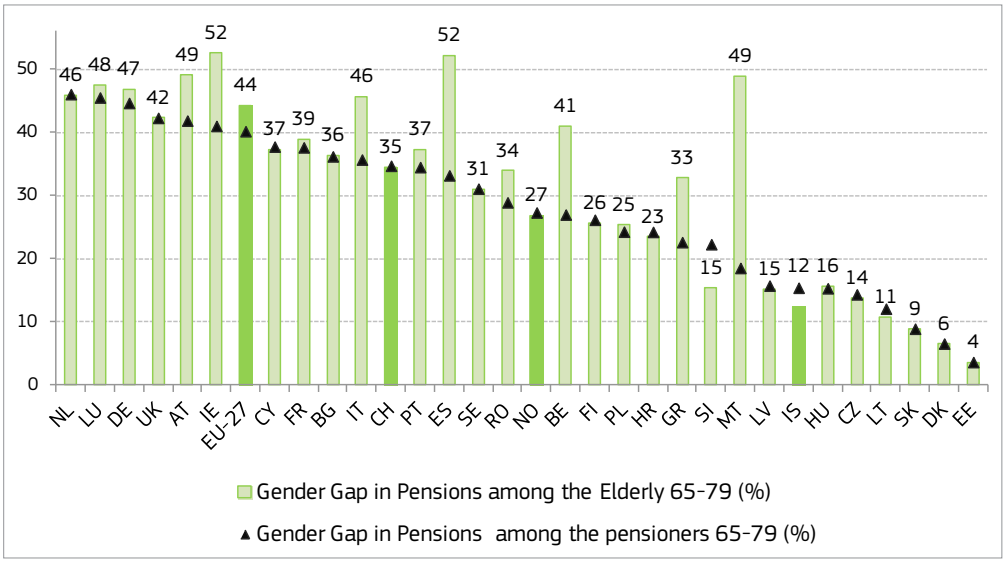
Source: EU-SILC 2012, own calculations. In BE and IE figures are based on 2011 data.

Computing pension gender gaps for the total population of people 65-79 rather than focussing exclusively on pensioners alters the picture considerably for those countries with large coverage gaps. Figure 7 looks at the elderly pension gender gap. That includes all individuals and not only pensioners in calculating the denomi-

20 Such may be an issue in Croatia where more women than men have contributed for less than two years, while the EU-SILC data actually show a small negative coverage gap.

nator of the gap. The widest pension gaps (52 per cent) are now found in Ireland and Spain which combine large pension gaps with coverage gaps. Malta follows closely with the largest discrepancy between the two indicators of pension gender gaps. At short distance in the ranking we find those countries where gaps are caused by women receiving low pensions, rather than not having access to pensions at all (Luxembourg, Germany, UK and the Netherlands).

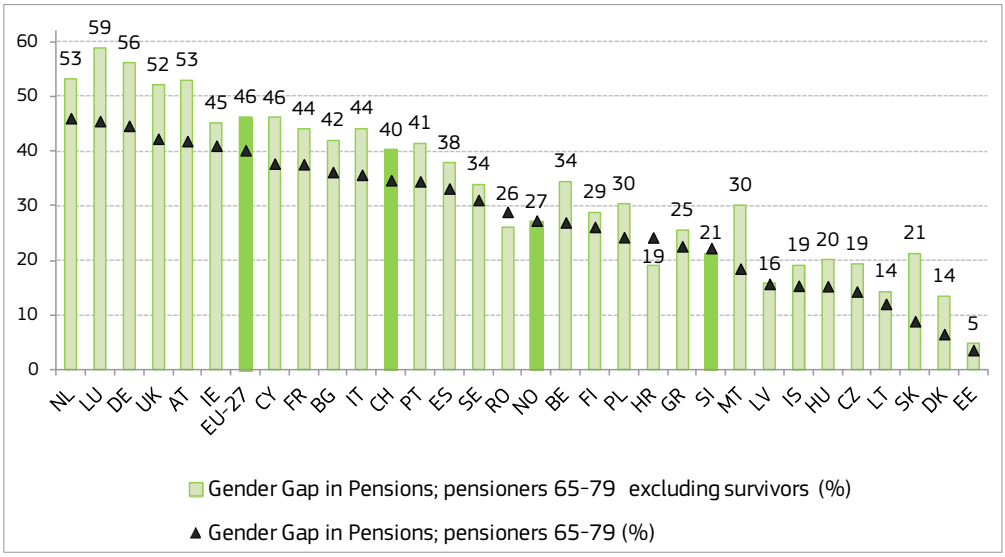
Figure 7: Gender Gap in Pensions among the elderly (%), 65-79



Source: EU-SILC 2012, own calculations. In BE and IE figures are based on 2011 data.

Coverage gaps in some systems are affected by rules regarding survivors' pensions. A couple where the woman is not entitled to her own pension will, in most, though not in all cases, be eligible for a survivor's pension on her own behalf. Bettio et al. (2013), focussing on the entire over 65 population, where widowhood is of far greater salience, noted that survivors' pensions can have an important equalising effect on gender gaps. The EU-SILC data do not distinguish survivor's pensions, so do not allow for an examination of 'own-right' pensions separately.

Figure 8: Gender Gap in Pensions; pensioners aged 65-79, excluding survivors, 2012

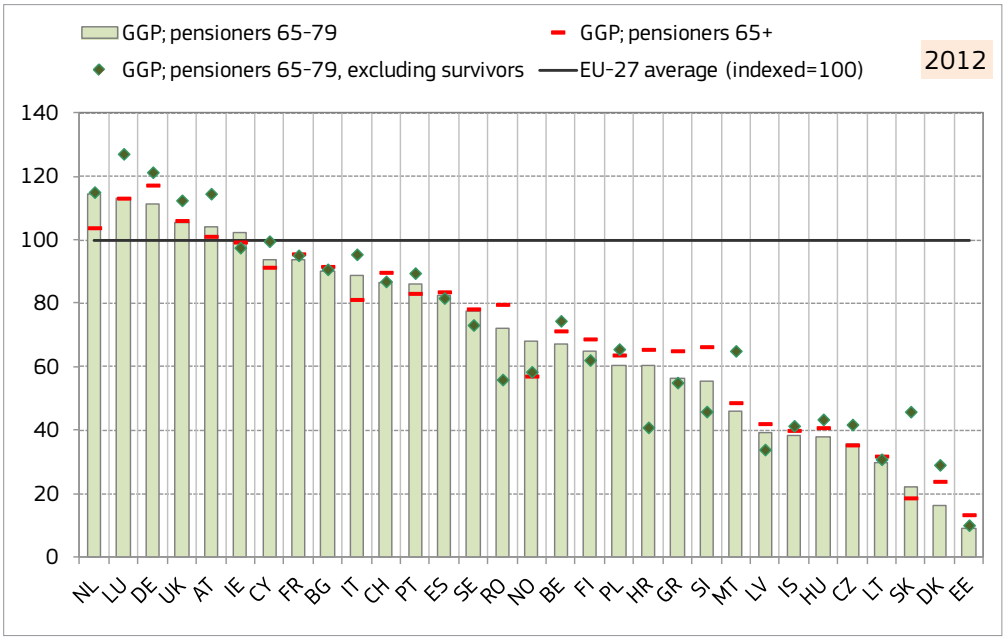


Source: EU-SILC 2012, own calculations. In BE and IE figures are based on 2011 data.

One way to approach this issue is to look only at those individuals who receive a pension as a personal entitlement and not a right derived from another person's work. This may be done crudely by excluding survivors (Figure 8). Given that we look only at the 65 to 79 group where widowhood is less common, we would expect the effect to be smaller than for older ages. However, even in this relatively younger group, computed gender pension gaps in general rise if survivors are left out. The EU average increases by six percentage points from 40 to 46 per cent. The largest impact occurs in those countries with the largest pension gaps (LU, DE, AT), as well as those with coverage gaps.

Concluding this general characterisation of pension gender gaps, it is pertinent to ask how important differences in definitions are in shaping the overall conclusions. Figure 9 compares graphically, in index form (EU27=100), the overall pension gender gap for the over 65 population, the central pension gap highlighted in this chapter and the same excluding survivors.

Figure 9: Gender Gaps in Pensions in summary



Source: EU-SILC 2012, own calculations. In BE and IE figures are based on 2011 data.

Table 3 examines the linked question of how sensitive the ranking of countries is to the choice of four indicators used. It compares the headline central gap indicator, the overall gap, the elderly gap and the gap excluding survivors. So, the second column presents the ranking of the 31 selected European countries based on the estimated GGP indicator for persons aged 65-79: 31 stands for the worst (highest gap) and 1 stands for the best (lowest gap) performance. The third column presents the difference between the ranking based on GGP indicator for persons aged 65-79 and the ranking based on the GGP indicator for persons aged 65 plus. For instance, the reported value -2 for DE indicates that it is ranked lower (31st) when ranking is based on the GGP indicator for persons aged 65 plus, compared to the reference measure. Bearing in mind that in many cases countries are found in clusters, changes in ranking are not very widespread in general– especially in reference to differences within the population of pensioners (age groups, non-inclusion of survivors). Differences as already noted are wider for the elderly gap, which includes the impact of coverage gaps.

Table 3: Is ranking sensitive to the choice of indicators?

2012	Ranking #	Difference with GGP 65-79 ranking		
Country	GGP; pensioners 65-79	GGP; pensioners 65+	GGP; Elderly 65-79	GGP; pensioners 65-79, excluding survivors
NL	**31**	3	6	2
LU	**30**	0	3	-1
DE	**29**	-2	3	-1
UK	**28**	-1	5	1
AT	**27**	0	-2	-1
IE	**26**	0	-5	1
CY	**25**	2	5	-1
FR	**24**	-1	3	1
BG	**23**	-1	5	1
IT	**22**	3	-2	-2
CH	**21**	-1	4	1
PT	**20**	0	1	-1
ES	**19**	-2	-11	0
SE	**18**	1	4	1
RO	**17**	-1	1	5
NO	**16**	6	3	3
BE	**15**	-1	-7	-3
FI	**14**	-1	2	0
PL	**13**	2	2	-3
HR	**12**	-1	2	7
GR	**11**	-1	-4	0
SI	**10**	-4	2	0
MT	**9**	0	-19	-6
LV	**8**	0	1	4
IS	**7**	1	2	1
HU	**6**	-1	-3	-2
CZ	**5**	0	-1	-2
LT	**4**	0	0	1
SK	**3**	1	0	-6
DK	**2**	-1	0	0
EE	**1**	0	0	0
Correlation coefficient		0.980	0.840	0.956

Source: EU-SILC 2012, own calculations. In BE and IE figures are based on 2011 data.

2.4 Time Trends in pension gender gaps

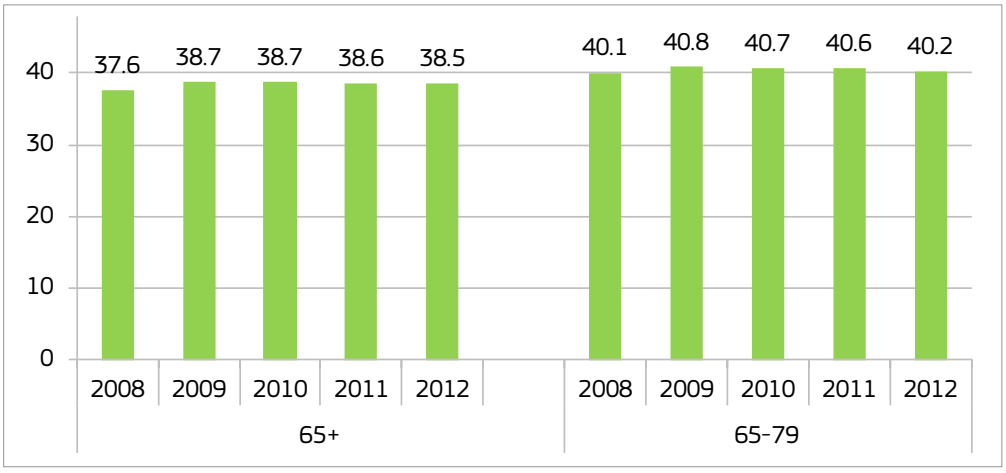
A question that must be posed is whether there are indications that things are improving over time or not. There are plausible grounds to suppose that either expectation could hold. If pension gaps are the result of past injustices, we may expect things to get better; if they are premonitions of future problems, they may be getting worse.

The next step is to see how pension gender gaps evolve over time using EU-SILC in a consistent way pensions for the five year period between 2008 (2007 incomes) and 2012 (2011 incomes). Though data exist from 2005 the definitions of pensions and other concepts used imply that those earlier data are of lower reliability and are less comparable than those of the period since 2008 (see Appendix).

In contrast, a five year period is probably insufficient to gauge longer term trends. Those may be linked to societal changes, such as the position of women born after the early 1950s in employment, or to changes in prevalent household arrangements. Equally, a five year interval is probably too short to reveal the impact of pension reforms. Even if incentives may have changed, and may even have affected the flow of individuals entering retirement, it is unlikely to be visible in indicators which are dependent on the *stock* of retirees.[21] Finally, we must note that year-on-year changes could be the result of technical issues unrelated to underlying changes. Such issues could be due to the underlying variability of statistics, but may also be due to institutional changes that may affect individual countries. The small run of years (plus the ability to retain the feature of the indicator as an early warning mechanism) precluded using devices such as moving averages to smooth out technical fluctuations (the Appendix discusses some of these issues in detail).

Figure 10 examines time trends in the average gender gap across the EU over the period between 2008 and 2012 for both the overall and the central gap. There is tentative evidence of a slight rise in the first years, especially for the overall gap, with a possible correction afterwards, though rough constancy could be a more apt overall description. The Appendix gives the detailed pictured by country.

Figure 10: Trends over time in the Gender Gap in Pensions, in the EU-27



Source: EU-SILC 2008-2012, own calculations.

21 Examining the flow of retirees entering retirement is not feasible given EU SILC sample sizes.

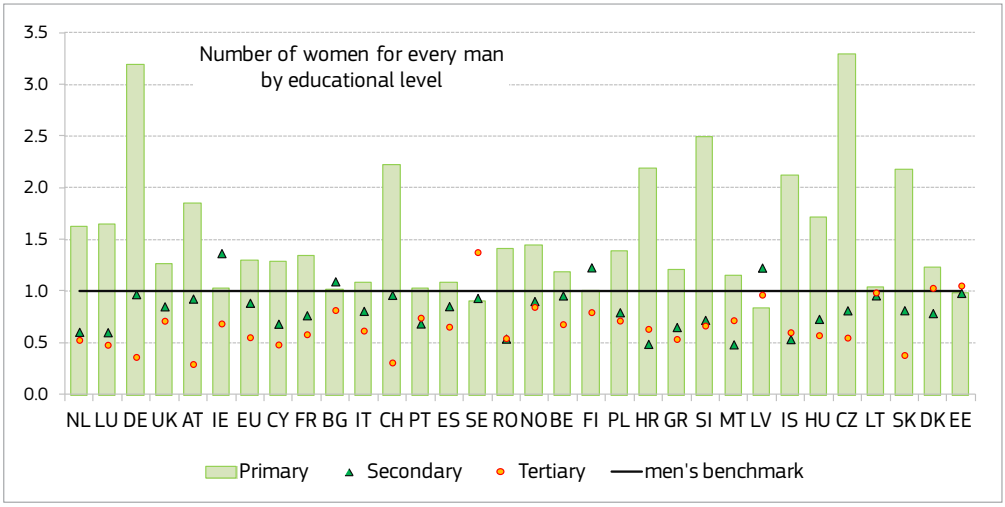
2.5 The pension gender gap in Europe: mapping diversity

This section tries to examine how gender pension gaps vary according to characteristics of individuals, such as education, income and marital status. The main object of our interest is the way the pension gender gap is linked to and reflects key characteristics of the population and their histories. Such characteristics are educational qualifications, career paths and positions in the income distribution.

Education: In many public pension systems pension entitlements are linked to contributions based on earnings from employment. In earnings surveys the variable most closely associated with long-term earning potential is education. Thus by looking at how education correlates with gender pension inequality we are getting closer to the idea that differences in pensions may reflect differences in the earning potential of men and women.

Men, for example, may systematically have higher pensions in earnings-related schemes if they have more educational qualifications, i.e. more 'human capital'. To approach this question Figure 11 computes the extent to which women aged 65-79 are overrepresented at lower education levels and underrepresented in higher ones. It reports the number of women for every man. A value of 3.2 for primary education means there are 3.2 women with only primary education for every man at this educational level. Conversely figures less than one for higher education imply the existence of more graduates among men than among women.

Figure 11: Distribution of educational level, by gender (persons aged 65-79)



Source: EU-SILC 2012, own calculations. In BE and IE figures are based on 2011 data.

Figure 11 shows that relative gender differences in education among this older group of Europeans are considerable, with older men having progressed further along the educational system everywhere in Europe. Older women aged 65-79 are everywhere more likely only to have primary education than men. What is also striking is the wide gulf in educational attainments separating the South of Europe from other parts –a difference which has shrunk decisively among working age cohorts. At the other extreme, gender differences in education in some countries in the North and East are all but negligible.

How are pension gender gaps related to education?

Table 4 shows – for all the European countries and for the EU27 average – the separate Gender Gap in Pensions according to educational attainment. The latter is distinguished into primary education (or less), secondary and tertiary. For purposes of comparison, the average (headline) gap is noted in each country. Given that the pension gap for each educational level is calculated relative to men of the *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; this would happen if there were larger differences between educational classes than within. For the EU27, for example the gap does not vary greatly by educational attainment and is a little lower than the gap for the entire population. In some cases those with lower education exhibit *lower* gender gaps. In terms of countries, this applies to the UK, the Netherlands, Ireland, Switzerland, Sweden, Finland, Latvia and Slovakia. However there are also cases where people with tertiary education exhibit lower gaps than those with primary education, such as in Austria, Spain, and Malta.[22] This could be due to greater concentration of women graduates in particular occupations –most notably the public sector which could be acting as a gender leveller. Higher education carries a wider gap in the Netherlands, Sweden, Finland, Poland, Iceland, Hungary, Czech Republic, Lithuania and Denmark, possibly due to the second pillar magnifying underlying earnings differences.

22 In tertiary education we must be mindful of small sample sizes implying unstable and unreliable estimates.

Table 4: Gender Gap in Pensions by educational level, 65-79

Country	Primary	Secondary	Tertiary
NL	32.1	40.3	49.1
LU	42.6	34.6	34.2
DE	36.5	39.6	31.3
UK	36.2	40.5	44.6
AT	35.7	37.3	15.6
IE	32.4	47.5	47.6
EU-27	34.3	36.0	36.0
CY	23.8	41.6	14.2
FR	33.7	29.3	35.1
BG	35.1	37.1	34.8
IT	33.6	28.3	33.9
CH	19.7	32.1	26.3
PT	32.1	52.6	16.9
ES	32.5	28.4	21.0
SE	24.7	33.3	39.4
RO	24.0	13.5	12.5
NO	25.6	31.0	17.7
BE	27.8	21.3	21.4
FI	18.2	20.7	33.3
PL	19.4	20.5	21.8
HR	17.6	9.4	10.5
GR	16.3	8.5	14.8
SI	16.6	10.3	11.4
MT	20.2	14.9	-10.4
LV	8.7	16.7	26.3
IS	-4.3	13.5	35.4
HU	10.2	4.6	18.4
CZ	11.7	12.2	12.7
LT	11.5	13.5	10.7
SK	6.0	4.8	12.4
DK	7.4	3.4	9.4
EE	2.5	1.1	8.6

Source: EU-SILC 2012, own calculations. In BE and IE figures are based on 2011 data.

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 –the educational attainment gap will shrink and greater parts of the population will be found in higher educational categories. The greater educational attainment is likely to be one of the most important drivers in future trends. The figures of Table 4 are, however, agnostic as to the direction of change we can expect. If current trends persist, a shift towards more educated women pensioners in the

future could lead to a widening of gaps in some countries and narrowing in others.

Distribution of pension income: So far we have been talking of pension gaps by comparing the average woman pensioner with the average man pensioner – looking at the centre of the distribution. The next step is to go beyond that, 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 differs between a distribution by education and one by pension level.

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

We therefore ask what share of women receives a pension less than the *men's* cut-off point -that is, the amount that the richest man of the bottom 33% receives. This effect –of overrepresentation of women at the bottom and under-representation at the top – can be expressed by means of odds ratios. Dividing the proportion of men at the bottom (33%) by 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 middle income women for every middle income man?*' Thus figures higher than one imply overrepresentation; less than one, the opposite.

The result appears as Table 5. For the EU27 average, 63% of women are 'squeezed' into a pension range that holds the poorest 33% of men (which could be expressed as saying that there are twice as many pension-poor women as pension-poor men; or for every pension-poor man there are 1.9 pension-poor women). Among high income pensioners, women are correspondingly underrepresented (for every 3 pension-rich men there is less than one pension-rich woman). Only in Estonia does the distribution of women follow almost exactly that of men, followed possibly by the Slovak Republic. 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, Luxembourg, Austria, Bulgaria, Germany, Cyprus Spain and the Czech Republic (all 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 over-representing women at the low end, come close to parity i.e. 30% at the middle.

Table 5: Distribution of pension income. Three linked odds ratios, 2012

Country	Number of poor women for every poor man	Number of women in the middle part (33%-66%) for every man in the middle part	Number of rich women for every rich man
NL	2.4	0.4	0.1
LU	2.3	0.4	0.3
DE	2.3	0.5	0.2
UK	2.0	0.7	0.3
AT	2.2	0.4	0.3
IE	1.9	0.8	0.3
EU-27	2.0	0.7	0.3
CY	2.1	0.5	0.4
FR	2.0	0.7	0.3
BG	2.2	0.6	0.2
IT	2.0	0.7	0.3
CH	1.8	0.9	0.3
PT	1.7	0.9	0.4
ES	2.1	0.5	0.3
SE	2.1	0.6	0.3
RO	2.0	0.6	0.4
NO	2.0	0.6	0.4
BE	1.9	0.7	0.4
FI	1.8	0.8	0.3
PL	1.8	0.8	0.4
HR	1.8	0.7	0.5
GR	1.4	0.8	0.7
SI	1.6	0.7	0.7
MT	1.6	1.0	0.3
LV	1.6	1.0	0.5
IS	1.2	1.1	0.7
HU	1.4	1.1	0.5
CZ	2.0	0.6	0.4
LT	1.7	0.9	0.4
SK	1.4	0.8	0.9
DK	0.9	1.2	0.9
EE	0.9	1.2	0.9

Source: EU-SILC 2012, own estimation. Estimates for BE and IE are based on 2011 data.

Family Status: Women's pension and labour force involvement are closely related to family status. Table 6 examines the effect on pension gaps of women's *current* marital status. For reasons of sample size in the central age group of people (65-79) it was possible to separate out people living in couples. The remainder i.e. single (never-married), divorced and widowed are necessarily included in a single category. Average pensions for each category of women are compared to the overall mean for men to avoid the problem of low sample sizes. Gender pension gaps are wider in

all countries among married women (52.3 per cent), more than double that of the residual category. In most countries being married implies a large disadvantage as regards gender gaps.

Table 6: Gender Gap in Pensions by marital status (65-79)

Country	Married	Other marital status (single; divorced; widowed)
NL	58.8	24.9
LU	69.1	22.1
DE	65.0	22.1
UK	56.4	21.7
AT	56.8	31.0
IE	47.7	35.9
EU-27	52.3	24.8
CY	47.2	25.1
FR	50.8	22.8
BG	43.6	30.5
IT	48.1	25.2
CH	50.2	16.4
PT	45.0	22.8
ES	43.3	27.1
SE	35.6	26.0
RO	27.1	30.1
NO	36.3	16.1
BE	40.3	17.1
FI	32.1	20.1
PL	31.0	20.5
HR	19.9	26.3
GR	28.4	17.6
SI	23.6	21.3
MT	33.2	14.0
LV	15.0	16.0
IS	23.0	2.2
HU	23.1	10.2
CZ	21.9	7.9
LT	17.2	9.4
SK	24.0	-0.2
DK	23.1	-11.6
EE	4.7	3.2

Source: EU-SILC 2012, own calculations. In BE and IE figures are based on 2011 data.

This finding reflects a decision of those women to accord homemaking greater priority than a career. It thus is essentially a result of assignment of gender roles within the household. However, in some cases the difference in gaps between groups is negligible or may even be in favour of married women (e.g. RO, LV, HR).

Broken careers: An important hypothesis explaining Gender Gaps in Pensions is that they 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 meet their family responsibilities.

In order to gauge the effect of short or '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 three categories according to labour force attachment, we have taken a mixed approach. The top 50 per cent of women, with a number of years of employment greater than the median years *for women*[23] for their country form the top category, the most 'employment-rich category'. This group would be exposed to the broken career problem to a lesser extent. To classify the remainder we note that in those countries that base their system on social insurance principles, the cut off for being entitled to a pension ('vesting') is usually 15 years. Thus, in this way three groups in ascending order of employment attachment are defined: (1) women with years of employment between 0-15 (further distinguished into two subgroups in table 7); (2) those between 15 and the median; (3) 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' (or social) pension at 65. This is the reason for aggregating the 'never worked' group with those with few years of contributions. Table 7 shows the classification of women into the three groups (Sweden, Denmark and Finland do not report this variable in the survey). It further breaks the low category into those with 0-10 and those with less than 15 years in employment. Whereas there is very little dispersion in median career length among men in Europe, the same cannot be said for women. Median careers range from 45 years in Portugal to as little as 6 years in Malta.

23 The (un-weighted) median value of years in paid work in the EU as a whole 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.

Table 7: Classification of women aged 65-79 according to broken careers status

2012	Distribution (%) of women by length of working career				Median value of working career (years)	
Country	**0-10 years**	**11-14 years**	**15-median** years in employment	***More than* median**	Women	Men
NL	14.5	37.5	--	48.0	14	42
LU	9.1	38.7	3.8	48.3	16	40
DE	5.9	17.2	27.0	49.8	34	44
UK	4.5	10.9	36.1	48.6	32	46
AT	10.2	9.3	31.1	49.5	32	43
IE	21.1	24.7	5.1	49.1	17	45
CY	24.3	13.6	12.3	49.8	20	46
BG	2.5	1.1	59.1	37.2	35	39
IT	20.6	9.7	20.3	49.4	25	40
CH	11.2	17.1	22.4	49.3	30	47
PT	3.2	4.5	42.9	49.5	45	49
ES	27.1	16.8	7.2	48.9	18	46
RO	9.1	2.6	39.2	49.1	33	39
BE	15.2	19.4	16.2	49.2	26	40
PL	2.3	6.1	53.8	37.8	35	40
HR	24.2	5.5	27.3	43.0	30	37
GR	19.9	6.0	24.4	49.7	31	40
SI	9.8	6.4	34.2	49.6	33	40
MT	41.7	10.7	--	47.7	6	43
LV	0.6	0.2	51.9	47.2	38	42
HU	3.8	4.0	42.5	49.7	35	40
CZ	0.1	0.9	55.2	43.8	38	42
SK	1.3	1.2	55.2	42.3	37	42
EE	0.2	0.6	56.7	42.4	40	43

Source: EU-SILC 2012, own calculations. In BE and IE figures are based on 2011 data.

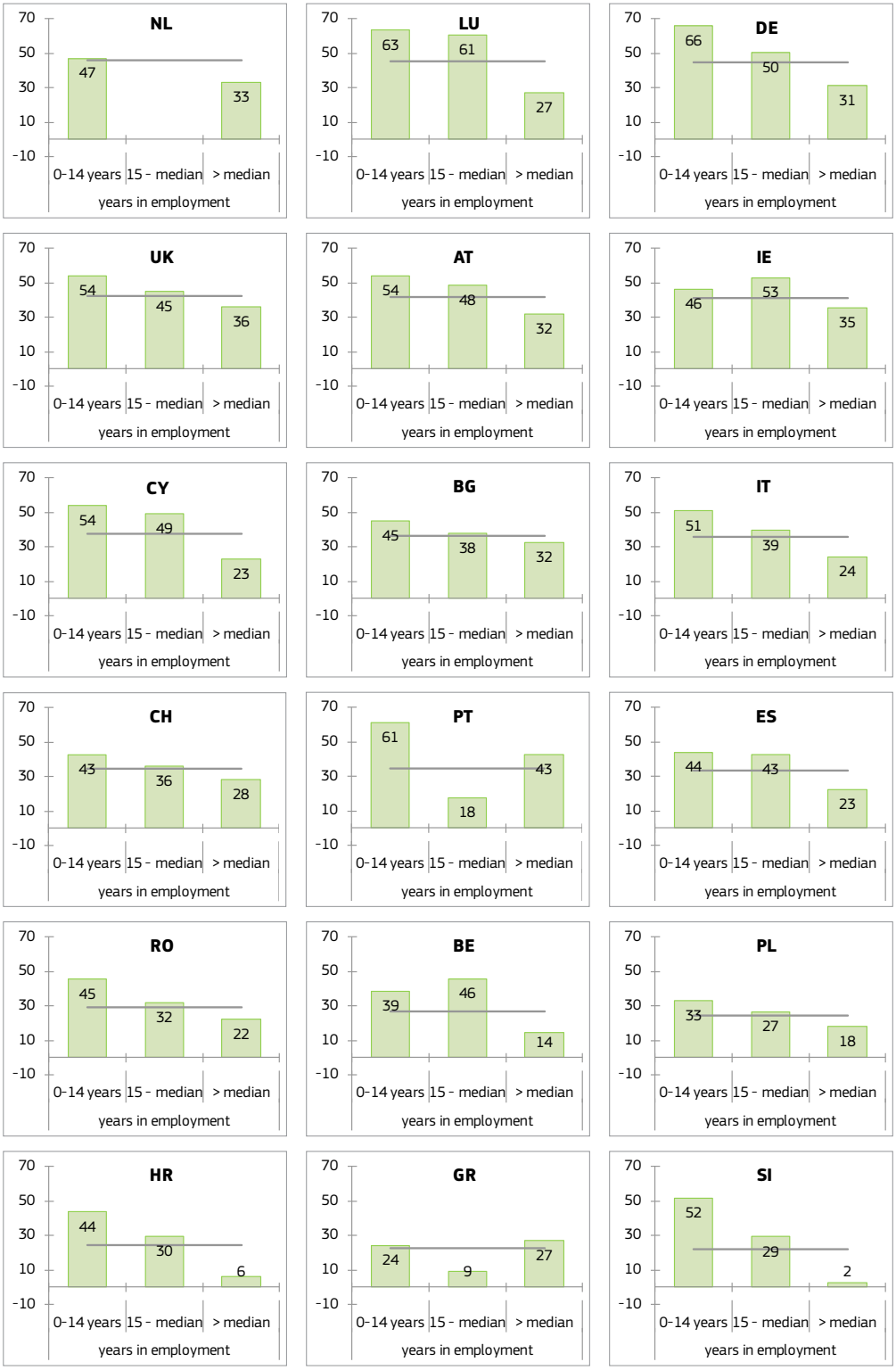
Note: The concentration of large numbers of individuals on the median value in BG and PL leads to the values above the median being less than 40 per cent.

As we are dealing with cohorts of older women (born before 1945), short or broken careers appear to be a major issue: in nine countries 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 (Table 7). In Western Europe differences are around 10 years (though in some cases such as the Netherlands considerably more). Differences are smaller in Eastern Europe and larger in Southern Europe (with the exception of Portugal which shows the smallest difference).

The next step is to apply this categorisation 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 mean pension of men (Figure 12).

Figure 12: Gender Gaps in Pensions (%) by years in employment, persons 65-79



Source: EU-SILC 2012, own calculations. In BE and IE 2011 data. No data exist for SE, DK and FI.

In general we may expect women with greater attachment to employment to be subject to smaller gaps than those whose links to the market are looser. Figure 12, which looks at the three attachment categories, largely bears this out. In all but one country women with greater attachment lag behind men to a lesser extent; those with less than 14 have the highest gap. In Germany for instance women who had been in employment for less than 14 years appear to have twice as high a Gender Gap in Pensions income (66 per cent) compared to women with the 'median' working life (50 per cent).The fall with greater attachment over all three categories seems to be the rule; only in two cases (BE and IE) is the middle category higher than those in the two extremes (though even then this may be linked to small sample sizes). Greece is the main exception where, remarkably, gender gaps are *higher* for women with the 'median' working life. This result may well be an artefact of the fragmentation of the system into occupational categories, each with very different generosity.[24]

2.6 The risk of poverty and gender pension gaps

The risk of poverty is the central concept in pension adequacy exercises. Gender pension gaps supplement this by offering a link to a distinct issue – that of economic independence. Whereas social inclusion examines access to resources to members of a household, gender pension gaps refer to a legal right to income on the part of an individual. It is thus a legitimate question to ask whether and in what way the two concepts are related. A simple way of doing this is to see whether there is any statistical association between measured at-risk-of-poverty statistics and gender pension gaps.

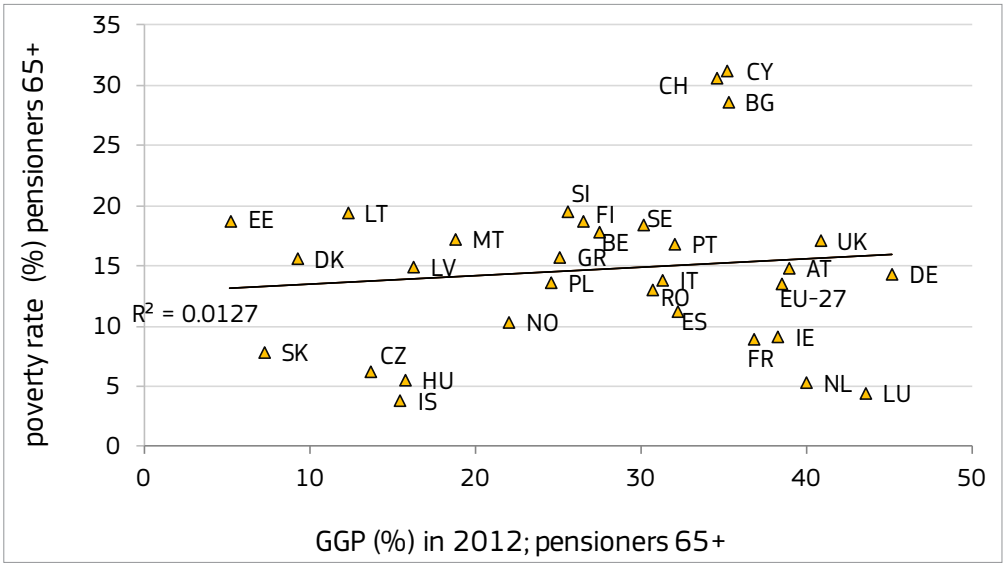
In Figure 13, where gender pension gaps are plotted against the risk of poverty for the EU SILC countries, there seems to be no relationship between the two concepts. The measure of association is essentially zero. Given that poverty is defined at a household level and gender gaps at an individual level, the absence of a relationship should not surprise.

24 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.

By using the GGP we have so far compared the average female pensioner in each country with the average male pensioner. An alternative comparison is to look inside the household and compare each woman with her own partner using the intra-household pension gender gap (GGP-H for short).

The Intra-household Gender Gap in Pension takes the difference between 'his' and 'her' pension -in percentage of his pension. For each couple household where both are pensioners a ratio is computed and the economy wide figure is the mean or the median of the distribution of such ratios. With a distribution of ratios the mean can be unduly influenced by extreme values, unlike the median. To play safe, we have therefore chosen the median for the analysis to follow.[25] We have also chosen to focus on the overall elderly population (couples where both are older than 65 and pensioners) in order to maximise the sample size when we compare couples on the basis of poverty status.

Figure 13: Gender Gap in Pensions and Poverty rate of pensioners aged 65+



Source: EU-SILC 2012, own calculations. In BE and IE figures are based on 2011 data.

Betti et al. (2015, chapter 7) perform an intra-household gap analysis using 2011 EU-SILC data. They find that in Europe the **median GGP-H is high** in absolute terms and higher than the GGP equivalent (45.1% in the EU27 compared to the 42%: 127-128). With the exception of Estonia, Greece, Ireland, Latvia, Romania and Slovenia the intra-household median gap in pensions dominates the overall gender gap in median pension in all the Member countries. A six country exception, however, is large enough to indicate that the result of the comparison between the two gaps is not a foregone conclusion. As Betti et al. (2015) argue, which gap prevails depends on a complex set of interactions among statistical, demographic and labour market factors. For example, confining analysis to elderly *couples*, to the exclusion of the widows, the never married and the divorced tends to drive the intra-household gap

25 Note that the GGP is a ratio between two average (or median) pension income figures, whereas the GGP-H is the average (or median) of individual gaps. As such the GGP-H is more likely to exhibit extreme values.

upward given that widows and unmarried women tend to have higher pensions (Table 6 above). Whatever the reasons might be, the alarm bell for economic independence for women in old age rings even higher when one looks inside households.

Table 8: Intra-household Gender Gap in Pensions for all and poor households

	GGP-H, median, all 65+ couples	*GGP-H, median, poor 65+ couples*
AT	60.9	-
BE*	38.2	71.6
BG	35.0	23.2
CH	44.2	2.0
CY	30.9	25.8
CZ	15.9	-
DE	62.2	74.7
DK	7.6	0.11
EE	1.1	-
ES*	33.0	36.3
EU-27	45.1	
FI*	27.9	18.5
FR	54.8	69.6
GR	12.8	0.0
HU	22.5	-
IE	16.5	-
IS	18.0	-
IT	44.6	28.4
LT	15.9	-
LU	87.2	-
LV	9.3	-
MT	33.5	-
NL*	47.4	0.0
NO	41.0	-
PL	30.4	8.7
PT	26.2	8.8
RO	24.0	-
SE*	32.5	31.1
SI	28.7	60.8
SK	17.5	-
UK	59.0	52.0

Legend: - less than 30 obs.; * between 31 and 50 obs.

Source: EU-SILC 2011, own calculations

Another key finding of Betti et al. (2015) is that, in the majority of European countries the most unequal couples in terms of pension income are *not* poor couples. This should cause little surprise given that we know from the literature on earnings and wealth disparities that larger gender gaps often occur at the top end of the distribution, i.e. among richer individuals. Using the same data as Betti et al. (2015) we take another look at this finding by comparing the GGP-H for all elderly couples of pensioners to that which obtains for poor elderly couples.[26] Table 8 sets out the figures, with the first column displaying the GGP-H for all elderly couple and the second displaying the poor couples' gap. This latter statistic, however, is reported only for the 17 countries where the number of poor households in the SILC sample is sufficiently large to afford critical statistical reliability.[27]

In the majority of these countries poor households are *more* gender equal in pension income. In some countries, however, gender pension disparities and poverty tend to go hand in hand. Figure 14 offers a graphic illustration of this comparison: above the main diagonal stand the countries where poor households are more gender equal; below the diagonal those where the reverse occurs. Distance from the diagonal measures the difference between the poor households' gaps and that for all the couples. The 'rule' is exemplified by Bulgaria, Cyprus, Greece, Denmark, Finland, the Netherlands, Italy, Poland, Portugal, Sweden, Switzerland and the United Kingdom where the intra-household gender gap in median pension of poor elderly couples is lower than the corresponding gender gap for the whole population of elderly couples. In four of these countries (namely Switzerland, Denmark, Greece and the Netherlands) the intra-household gender gap of poor elderly couples is negligible (less than 2 per cent); and in two more countries (Poland and Portugal) less than 10 per cent. Exceptions to the rule are France, Germany, Belgium, Slovenia, and to a lesser extent Spain, where poor couples are also more gender unequal.

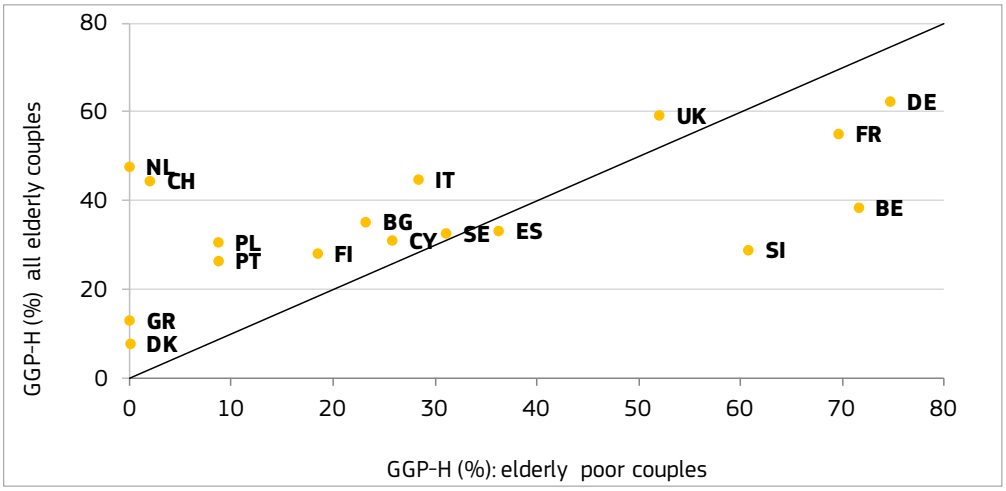
Why the rule and why the exceptions? Lower pension gaps for poor households *now* could be an echo of *very large* income disparities among affluent working couples *in the past*. Women have been making major inroads into top paid professions and occupations only in the last thirty to twenty years and even now parity is far from being achieved at the top end of the earnings distribution. As we noted earlier, it is still common to find that gender income disparities are larger at the upper end of the earnings pyramid. A larger-gap-at-top-earnings effect might be enhanced by statistical selection: the likelihood of both partners surviving past 65 years might be higher among affluent households where health conditions are generally better.

This kind of reasoning may work for 'the rule', at least in part, but leaves the exceptions unexplained. However, an explanation demands specific investigation into a large set of potentially concurring factors. This is outside the scope of our investigation here and may not even be feasible within the confines of EU-SILC.

26 SILC variable HX080 was used to identify poverty status.

27 The population subsample that obtains by selecting couples where both have a pension is bound to exhibit much lower prevalence of poverty than the rest of the elderly population. This is because poverty is measured at the household level; hence households where each member has an income are much less likely to be poor. This strong selection effect is responsible for reducing the number of poor families in our sample, which may detract from the robustness of our results. The rough rule of thumb we have adopted is more than 30 observations (couples) per country. In the tables we also flag the countries with less than 50 observations.

Figure 14: Intra-household gender gap in median pension: how different in poor households?



Source: EU-SILC 2011, own calculations.

2.7 Concluding thoughts

2.7.1 An overview of the results

What has this investigation of statistical pension gender gaps in 2011 shown us about pension and gender? A simple pass-through comparative data cannot be expected to be decisive, especially if that data was not specifically designed to answer a given question. The logic of a context indicator is to shine an exploratory light on an issue as a first step for future thoroughgoing treatment. It thus raises awareness and pinpoints issues where more analysis – both statistical and policy – must be brought to bear.

The statistical investigation of gender pension inequality set out in this report retraced some steps taken over the last two years in the study by Bettio et al. (2013), conducted for DG Justice, and Betti et al. (2015). These studies looked at gender pension gaps in Europe using broadly the same methodology but employing earlier waves of EU-SILC data. In this way, the gender pension gap exercise has been repeated already three times using EU SILC data covering incomes for 2009, 2010 and (now) for 2011. This repetition produces a 'feel for the data', but also allows us to speak with greater confidence in those cases where findings are repeated but also to be more circumspect where results are only suggestive or may not be robust.

There are *five* conclusions which can be repeated with confidence and can serve as 'stylised facts' for policy discussion or may serve to orient future work:

First, and most importantly, gender gaps in pensions in the EU are **very wide**. On average they imply that women lag behind men in their pensions by a factor of the order of 40 per cent. This figure is a little less than twice the gender gap in *earnings* for the latest year available. A gap of this order of magnitude is *not* sensitive to choice of definitions, methodologies or age groups covered.

Second, pension gender gaps in Europe exhibit **very wide dispersion**. Computed gender gaps range between 46 per cent and 4 per cent. This is far wider than in the

case of earnings gaps; indeed some of the best performers in pensions are amongst the worst performers in earnings. This observation can serve to illustrate two key inferences. Firstly, pension systems are not neutral filters simply reproducing gender inequalities found in paid employment. Secondly, the fact that the extent and urgency of the issue of gender pension inequality is very different across Europe can support a conclusion that there is nothing *necessary* about inequality in pensions; we can point to examples where gender inequality in pensions is contained at very low levels.

Third, one of the most important sources of differentiation between member states is the extent to which there remain gender gaps in coverage, i.e. the extent to which women (more than men) do not have their own independent access to pension system benefits. In some countries, coverage gaps of the order of a third remain and are therefore a key driver.

Fourth, there is considerable diversity in experience both between and within member states. This is confirmed in the case of three dimensions examined, education, pension size and career experience. There are hardly any generalisable patterns observed that can be said to hold across member states. Similarly, there is little or no relationship with poverty status at country level. However, a clearer relationship is observed at household level, with a tendency for the most gender unequal households *not* to be poor. These observations can be used to support a contention that gender imbalance introduces a policy issue, economic independence, which is largely distinct and independent of existent objectives such as social inclusion.

Fifth, trends over time are hard to generalise and merit greater investigation. The investigation was based on a short run of years of comparable data, where no overall trend can be discerned. Trends seen in individual countries may be due to history, to institutions or to policy responses. In some cases, though, statistical issues and infelicities probably played a role in shaping the observed response. As a result, as far as time trends are concerned, it is best to remain agnostic.

Do these findings enable us to say anything about the question posed at the outset of this enquiry, that is about the link between pensions and women's economic independence? Will women who have become accustomed to enhanced levels of independence in their careers in the paid labour market, be forced to adapt to a situation of greater dependence on men when they enter retirement?

Our results show that *some* women who are now amongst pensioners over 65 may be facing a situation of lesser independence. Without confirming any specific association, the results have certainly *not* laid to rest fears that this situation will not be met by some (or possibly many) women in future. Gender pension imbalance, as measured by pension gender gaps, is a feature in many countries and is likely to remain so. On the other hand, the marked variability of results indicates that no *necessary* association exists. Even in countries with high earnings inequalities, it was possible for gender gaps in pension to be well below average. This finding is open to an optimistic reading; though a danger to economic independence exists, it also appears to be preventable. Indeed, it appears that in some countries such a danger has largely been prevented already.

2.7.2 What are some drivers for the observed inequalities?

Our data and analysis were not precise or detailed enough to isolate and identify the independent effect of particular issues or pension design features. However, explanations of the observed pattern of gender inequality must include examinations

of a number of issues, which can act as drivers determining the extent and incidence of pension gender inequalities. An observation that must be made at the outset, is that none of these factors appears *prima facie* to operate straightforwardly:

- The impact and treatment of **widowhood**. The fact that women live longer and that in most countries they tend to be younger than their partners implies that bereavement has an impact which rises with age. In those countries where death of a spouse generates an entitlement to a survivor's pension, this should operate as a powerful equalising factor. Even if the over 80 group was excluded from the analysis, as in this chapter, pension gender gaps excluding survivors were uniformly larger in Figure 8. Interestingly, this effect characterised even countries that have no explicit survivor's pension. This can be taken to indicate that widowhood gives rise to complex effects, only partly due to survivors' pensions; limiting it to an issue of economic independence is perhaps too restrictive.
- The existence of '**citizen's pensions'** which are usually drawn as of right after some age exert a powerful effect on the statistical picture. On the one hand, such pensions all but eliminate coverage gaps; these gaps are more common in countries relying on the social insurance paradigm which frequently encompassed married persons' allowances to the main pensioner (who tended to be the male breadwinner). Citizen's pensions do away with coverage gaps, but through the existence of a large number of women with low pensions they can push measured pension gaps upward. This observation underlines that pension inequality cannot be reduced to a single statistic. In the same way as analysis of gender imbalance in the labour market is broken down into an earnings gap and a participation gap, in retirement we need to look at the pension gap and the participation gap as separate issues.
- The institution of **multi-pillar systems** raises an issue akin to coverage. Though our data were insufficient to tackle this question, equality of access to all pension pillars can be presumed to play an increasingly important role, as multi pillar systems pick up momentum with time. The feature likely to drive inequality is the unequal access experienced by women to different *parts* of the overall pension package. In particular, whereas social policy typically ensures more or less equal access to first pillar public pensions, this need not hold for other non-state pillars. These are likely to be affected by occupational segmentation and may favour workers with characteristics that in practice would make it more difficult for women to participate. Interestingly, those countries with relatively mature multi-pillar systems (NL, UK, CH and DK) are found all through the spectrum of gender pension gaps in Europe.[28] So, although, there must certainly be impacts from differential coverage these must not be of the kind that cannot be overcome or otherwise neutralised.
- The **closer linking of contributions to entitlements** can be a powerful instrument in limiting efficiency side-effects of pension systems in the context of strengthening system sustainability. However, it can have the negative effect of reproducing or even magnifying existing features of the labour market where women differ from men. Chief among these are career structures, which for women tend to be far less linear than for men. Broken careers are only the most obvious such feature; inequality in earnings and greater frequency of flexible working arrangements have similar effects by, in effect, systematically favou-

28 The requirement of unisex occupational pension in Europe is a powerful equalising force in preventing systematically lower pensions for women; however, coverage and other effects will continue operating.

ring lower pensions for women than for men. At a very simple level we saw that pension gaps tended to be larger for women who had worked for few years. If this relationship was visible in the case we studied, that is of an older group comprising the stock of pensioner 65-79, then we can expect it to be a more potent threat for the flow of pensioners to enter retirement in years to come.

- Social structures and habits of individuals may take **a long time to adapt**. So, those pension reforms which relied on changing incentives to alter behaviour need to be allowed time for their full impact to be felt. In the meantime, the stock of pensioners will unavoidably be comprised of three groups: First, those with insufficient time to have adapted, who had lived most of their lives in previous systems. Second, the intermediate group who faced the new incentives but had not fully adapted yet. Finally, those whose response to the incentives fully compensated for the original problem. Even if the last group may ultimately dominate, the other disadvantaged groups will still be very numerous, if not dominant, in the short to medium terms. This protracted time structure necessitates thinking of arrangements for the very long term at the same time as needing short to medium term corrective measures. We find in pension systems many devices, such as credits for time spent out of the labour market, which are designed to correct for broken careers. These measures, however, were introduced too late to have an impact on measured pension gaps of today's 65-79 population. Other measures introduced to help older women to reconcile family and caring with work responsibilities could conceivably begin to have visible impacts sooner.

2.7.3 The pension gender gap and policy regimes

The observations above can translate to suggestions for technical improvements and the fine tuning of instruments to answer individual issues. Caring credits or possibly initiatives linked to widowhood could ameliorate disadvantage *ex post* or perhaps prevent it *ex ante*. A similar impact could be achieved in a more diffuse way by selectively boosting lower pensions by devices such as pension minima. None of these measures are fiscally neutral, which means that the discussion needs to be broadened to encompass possible fiscal trade-offs between, say, social inclusion and greater economic independence.

However, no one instrument or pension system parameter can explain the general patterns we saw over the member states of the EU. Observed pension gender gaps reflect different approaches to gender and many of the issues raised in discussing concepts.

At the base of the problem is that many pension systems still reflect the division of responsibilities that was prevalent within households at the time of their design – in some cases more than a generation ago. Pension systems favoured the existence of a long and linear career generating a steady income stream; households and individual gender roles within them largely matched such a pattern – whether in the context of lifecycle saving or contributing to a state run social protection pension. These arrangements generated a stream of total entitlements to the household; it was not considered as a suitable concern of public policy to look inside the household in order to influence how the total amount was distributed between the partners. The benevolence of household decisions was assumed without question, and hence the issue of who is entitled to what was never raised.

Talking schematically, we may ask whether pension arrangements still correspond to a man's world. This would certainly characterise social insurance systems au-

gmenting the main breadwinner's entitlements for family responsibilities. However they could also characterise new systems based on reciprocity; such systems penalise the types of behavioural choices which are more common among women than men, such as broken careers and flexible working. Those new systems, in giving incentives to promote system sustainability, link pensions closer to individual entitlements and hence anchor pensions more closely to the world of work; by privileging what is frequently thought as a 'male' working profile they create new vulnerabilities. This would be especially so, if the reality in the labour market may be moving closer towards what were previously considered 'female traits'. Such features as changes in employer or direction, periods out of the labour market, greater prevalence of flexible working practices increasingly characterise both genders, a trend most visible for younger workers. In this sense, insisting that pension systems accommodate gender issues is to an extent co-terminous with the need for greater flexibility to meet the *general* challenges looming in employment.

Accommodating the needs for women in pension systems, according to Jefferson (2009)[29] can adopt a number of broad long-term strategies which have implications both for pension design as well as for the balance between the pursuit of social inclusion and economic independence as a separate objective. Policy may proceed in three broad strategic directions:

First, the most conservative strategy is to prioritise social inclusion and not to recognise economic independence as a separate objective. This essentially remains within the logic of a traditional approach where public policy sees no reason to be concerned with how total household resources are handled by household members. Systems could protect husband and wife on the basis of a single unified set of contributions and benefits, administered with a set of social criteria pertaining to the *household*. Such a system would institutionalise dependence, but would devote all resources to poverty prevention. It is equivalent to a statement that the household is better able to handle its own matters than the State and that it can be trusted to operate in a benevolent manner. However, it would leave unanswered the increasing number of cases where households are 'non-standard' – i.e. widowed or divorced.

The second route is to encourage women to adopt features of men's lifestyles (or to shrink gender-based differences in careers). Thus, inequality is corrected in the long term by preventing difference in the labour market and in saving behaviour *ex ante*, that is before pensions are issued. However, success is conditional on avoiding the risk of discouraging fertility or of depleting overall resources devoted to care work (unpaid or paid), which would backfire on financial and economic sustainability. Encouraging women to make full use of good child care facilities, for instance, may be thought to correct one of the key sources of disadvantage by preventing breaks in careers. Giving incentives for fathers to shoulder more of the child bearing responsibilities would also contribute to enhance similarities of employment patterns for men and women while boosting overall care resources available to households.

The third route is to compensate for broken careers and lower pension rights, i.e. to intervene *ex post*, *after* entitlements have been determined. This could be achieved by compensating for *specific* disadvantages and could be examined as a corrective strategy for inequalities already existing. Such could be caring credits, tax breaks for child rearing or other equivalent devices.[30] However, compensation may be pro-

29 T. Jefferson, 2009, 'Women and Retirement Pensions: A Research Review', *Journal of Feminist Economics*, 15(4) pp 115-145.

30 Including initiatives to limit the impact of administrative and other fixed costs on smaller pensions.

vided by adapting the *state* system to compensate for women's disadvantage. For instance reducing reference for periods for a full pension and/or calculating pension rights over shorter periods would result in an improvement for women. Minimum pensions would similarly provide some correction if women have systematically lower contribution histories.[31] These measures could be proposed for the *flow* of new cases experiencing instances of disadvantage, or could be extended retrospectively to cover older cases where the disadvantage took place in the past. The latter option would correct cases with greater speed, but would necessitate a larger fiscal outlay. If these measures were to be implemented to the stock of pensioners i.e. to the population group of population studied in this chapter, the fiscal cost would be considerably higher.

31 Minimum pensions can address the issue of gender imbalance; however, by flattening reciprocity and incentives they operate as an incentive to evade contributions.

References

Note: included here are only references to previous work of the authors of this report on the issue of gender and pensions. For further references we invite the reader to consult these publications.

Betti, G., Bettio, F., Georgiadis, T. and Tinios, P. (2015). *Unequal Ageing in Europe: Women's Independence and Pensions*, New York: Palgrave Macmillan.

Bettio, F., Tinios, P., and Betti, G. (2013). *The Gender Gap in Pensions in the EU*. Report prepared for the European Commission, Directorate-General for Justice; Unit D2 "Equality between Men and Women". Available at: http://ec.europa.eu/justice/gender-equality/tools/experts/index_en.htm

APPENDIX

Statistical Issues

Data issues: Our main primary source is the European Survey on Income and Living Conditions (EU-SILC) 2005-2012 runs. We use the latest releases of the survey micro data for all years except 2012, for which we rely on the first release.

Use of EU-SILC data for pension income over this interval raises the following issues:

1. The 2012 release we use does not include data for Ireland and Belgium. For these two countries we therefore relied on the 5th release of data from the 2011 run.
2. Pension income data are available for EU27 countries from 2008 to 2012 and for Croatia and EU28 from 2011.
3. However, fully comparable data across countries are only available from 2008 to 2012; Eurostat has not performed consistent quality and comparability checks on the first three runs. Moreover some countries reported net, other countries reported gross income figures in the first runs of the survey. In particular Greece, Italy, Latvia, Portugal reported net pension income in 2005 and 2006, Spain in 2005.
4. Residual discontinuity in time series may concern specific countries, for example a possible break in the SILC series 2011 to 2012 for the UK.
5. For some countries the population subsamples of interest may be too small to yield enough observations for statistical reliability when broken down into finer categories. For example, the number of poor couple households with both members older than 65 and in receipt of pension was lower than 30 in nearly one third of the Member States in the 2012 run. In such cases we flagged the category/country concerned or did not report the figure (see, for example Figure 14 in the main text).

***Volatility of the indicator*:** Our headline indicator is the mean Gender Gap in Pension, which we further distinguish into the *overall gap referring to the population over 65 years of age and the central gap referring to the 65-79 years old population.* Because the GGP is a ratio between average pension incomes it may display higher statistical volatility than each of the average income figures featuring at the numerator and at the denominator. With a typical sampling error of 5% for the average pension income of a sample of about 1000 individuals, we may therefore expect the sampling error for the GGP to exceed 5%. In countries with sample sizes smaller than 1000 the order of magnitude of the GGP sampling error increases further and the increase tends to be higher for very small gaps (close to zero). This has two main implications

1. The central gap (65-79 years of age) is less statistically efficient than the overall gap. In other words the sampling error is higher for the 65-79 gap. Table A.1 below shows the loss of efficiency (meaning higher standard errors) entailed by computing average income pension values for men (or women) aged 65 to 79 years compared to the 65+ group. The average EU27 loss is 14 percentage points for women and 11 points for men, with peaks of 21 points for women in Spain.

2. In countries with small sample sizes for the elderly population, the GGP can vary over time for mere statistical reasons, i.e. because the sampling error decreases or increases. Table A.2 computes the coefficient of variations of the central GGP between 2008 and 2012. Small countries like Slovakia, Latvia, Iceland, Estonia and Denmark show high coefficient of variations (high volatility) without there being a consistent upward or downward trend signalling that the gap may be increasing or decreasing for 'real' reasons. Of course, accounting for the precise nature of the variability over time of the GGP in each country is outside the scope of the report. However, the possibility that statistical as well as real factors may be at play must be kept in mind when analysing trends over time.

Table A1: Loss (or increase in standard errors) of using pension average values for the 65-79 age group. 65+ age group =100

Country	Pensioners 65+ (# males)	Pensioners 65+ (# females)	Pensioners 65-79 (# males)	Pensioners 65-79 (# females)	Loss using 65-79 (males)	Loss using 65-79 (females)
AT	969	1,067	773	788	0.89	0.86
BE	988	871	798	640	0.90	0.86
BG	1,349	1,963	1,054	1,491	0.88	0.87
CH	1,374	1,631	1,089	1,243	0.89	0.87
CY	870	1,038	715	789	0.91	0.87
CZ	1,582	2,224	1,261	1,675	0.89	0.87
DE	2,905	2,709	2,602	2,433	0.95	0.95
DK	1,004	916	843	755	0.92	0.91
EE	885	1,532	721	1,127	0.90	0.86
EL	1,416	1,591	1,021	1,074	0.85	0.82
ES	2,626	2,567	1,917	1,594	0.85	0.79
EU-27	40,263	49,834	32,102	36,958	0.89	0.86
FI	1,554	1,647	1,262	1,242	0.90	0.87
FR	1,989	2,381	1,512	1,684	0.87	0.84
HR	1,057	1,648	830	1,201	0.89	0.85
HU	1,416	2,647	1,119	2,001	0.89	0.87
IE	791	788	619	562	0.88	0.84
IS	372	369	288	276	0.88	0.86
IT	4,021	4,759	3,122	3,194	0.88	0.82
LT	1,128	1,729	910	1,304	0.90	0.87
LU	870	811	727	647	0.91	0.89
LV	1,045	2,340	834	1,658	0.89	0.84
MT	948	723	918	678	0.98	0.97
NL	1,367	1,519	1,119	1,171	0.90	0.88
NO	858	841	682	655	0.89	0.88
PL	2,019	3,305	1,592	2,398	0.89	0.85
PT	1,526	1,944	1,169	1,408	0.88	0.85
RO	1,679	2,059	1,334	1,565	0.89	0.87
SE	1,276	1,333	1,007	1,044	0.89	0.88
SI	1,370	1,909	1,086	1,399	0.89	0.86
SK	714	1,236	591	976	0.91	0.89
UK	1,956	2,226	1,476	1,661	0.87	0.86

Source: EU-SILC 2012, own calculations. In BE and IE figures are based on 2011 data.

Note: The loss is computed as the square root of the ratio of 65-79 group size to the 65+ group size (for men and women, respectively).

Table A2: Gender Gap in Pension, 65-79 (mean) : coefficient of variation 2008-12

Country	Gender Gap in Pension, pensioners 65-79 (mean, %)					Coefficient of variation
	2008	2009	2010	2011	2012	
AT	33.9	35.0	33.8	40.2	38.9	7.4
BE	29.5	29.1	29.3	27.5	27.5	3.2
BG	26.9	30.2	32.8	31.1	35.3	9.0
CH	38.7	34.4	33.7	34.0	34.6	5.3
CY	40.9	38.8	38.9	38.2	35.2	4.8
CZ	10.4	10.5	12.8	13.7	13.7	12.1
DE	42.7	44.6	43.7	44.0	45.1	1.9
DK	16.6	20.3	18.8	11.2	9.2	28.3
EE	3.4	4.4	4.4	3.0	5.2	19.0
ES	33.1	32.8	32.9	32.4	32.2	1.0
EU_27	37.6	38.7	38.7	38.6	38.5	1.1
FI	25.6	25.5	24.9	26.7	26.5	2.6
FR	38.2	38.8	38.4	36.6	36.8	2.4
GR	38.1	36.4	35.6	29.7	25.1	14.7
HR				26.3	25.2	2.1
HU	14.2	15.5	15.0	15.8	15.7	3.8
IE	32.3	35.0	36.3	38.2	38.2	6.2
IS	16.6	23.8	24.3	23.0	15.4	18.5
IT	32.0	32.6	30.9	33.0	31.3	2.5
LT	16.3	17.9	15.3	12.7	12.3	14.4
LU	45.3	43.4	46.6	46.4	43.6	3.0
LV	14.7	10.3	9.1	14.6	16.2	21.2
MT	19.1	19.2	21.1	18.4	18.8	4.9
NL	37.7	39.0	40.4	40.6	40.0	2.7
NO	28.6	30.6	30.0	29.1	22.0	11.1
PL	21.8	21.4	22.9	24.2	24.6	5.5
PT	34.2	34.7	33.1	31.3	32.0	3.9
RO	31.6	30.9	31.5	30.7	30.7	1.3
SE	30.8	32.0	32.5	32.0	30.1	2.8
SI	29.1	27.9	28.6	28.4	25.6	4.4
SK	11.6	9.6	7.8	14.9	7.2	27.1
UK	37.8	40.3	42.8	41.1	40.9	4.0

Source: EU-SILC 2012, own calculations. In BE and IE figures are based on 2011 data.

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