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### **Deprivation of women and men living in couple: sharing or unequal division?**

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#### **Abstract**

In the standard poverty analysis, all household members are assumed to share equal living conditions. The few studies to date about differences in deprivation between partners in a couple find that such differences are not very common, but that when they do occur, they are somewhat more often to the disadvantage of women than of men. There is, however, no study comparing differences in deprivation between partners within the EU. This paper is the first to present empirical evidence on this issue for a range of EU countries, using the 2015 wave of the EU Statistics on Income and Living Conditions (EU-SILC), which contains a number of items on deprivation at the individual level. We map the extent of intra-couple inequality in deprivation, and analyse its determinants. We find that, for all items except access to internet, the gender difference in enforced lack between partners, though generally small, is significant and at the disadvantage of women. When aggregating the individual items into a deprivation scale, couples where the number of enforced lacks is higher for the woman (9.2%) are more numerous than couples where the man is disadvantaged (6.5%). The work status of the partners and their relative contribution to the joint income are important determinants of the intra-couple gender deprivation gap. We pay special attention to the possible effect of proxy interviews, which are quite numerous in some countries.

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## INTRODUCTION

In the standard poverty and deprivation analyses, all household members are supposed to share equal living conditions. This assumption is for example implicit in the at-risk-of-poverty rate used at the EU level, which is derived from household income. Household income is the aggregation of individual income received by all household members as well as the income components received at the household level (such as rent, some social or inter-household transfers etc.). The same assumption has also been made to date for the EU standard deprivation indicator, which is based on nine items collected in the household questionnaire (see Guio, 2009 for a description of the EU agreed indicator). Researchers have been aware for some time that this assumption is rather restrictive (Jenkins, 1991), and could result in a downward bias of estimates of the extent of poverty and deprivation, especially among some subgroups, such as women and children. Intra-household inequality could mean that some persons in a household are living in poverty or deprivation, even though the household as a whole is above the threshold, and also that a family below the poverty threshold could contain someone who is above it.

A number of studies, using various methods and data, have looked into the “black box” of the intra-household distribution of incomes and consumption. Though a few have studied the distribution between parents and children (see e.g. Main and Bradshaw, 2016), most studies focus on the intra-couple distribution (as we will do below), covering different aspects. Some investigate the ways in which a couple’s finances are managed and controlled, while others have studied individual consumption or living standards of wives and husbands within couples (see Bennett, 2013, for a review). Only a few studies for Ireland (Cantillon and Nolan, 1998, 2001; Cantillon et al., 2015) have looked at differences in deprivation within couples. These indicate that such differences are not very common, but that when they do occur they are more often to the disadvantage of wives than of husbands.

This paper is the first to present empirical evidence on this issue for a range of EU countries. It uses the data on material deprivation of the 2015 wave of the EU Statistics on Income and Living Conditions (EU-SILC), which contains a number of items on deprivation at the individual level, in addition to the usual deprivation items collected at the household level. We map the extent of intra-couple inequality in deprivation, and analyse its determinants. The paper is structured as follows. The next section reviews the literature on intra-couple inequality, discussing studies on differences in outcomes (consumption, deprivation), as well as those on management and control of a couple’s finances. Section 3 presents the data and methods. Descriptive results are shown in Section 4, while Section 5 investigates the determinants of the gender deprivation gap. Section 6 is devoted to the possible effect of proxy interviews on the results. Proxy interviews are used when a person is not available for interviewing. Section 7 concludes, discussing the substantive findings, as well as making recommendations for future data collection.

## 2. LITERATURE REVIEW

The call by Jenkins (1991) to stop ignoring the within-household aspects of poverty was first followed by studies which used alternative assumptions for the distribution of incomes within households (Bennett, 2013). Davies and Joshi (1994) examined the impact of making the assumption that there would be only minimum sharing between adults within households, and show that this leads to a much higher estimate of poverty among married women. (Also see Borooh and McKee, 1994; Phipps and Burton, 1995.) Such studies suggested that there might be a substantial reservoir of hidden poverty among wives in seemingly non-poor households.

When looking into the “black box” of intra-household distribution, it is important to distinguish between outcomes and processes. The first term covers consumption, living standards, deprivation and, ultimately, well-being, while the second concept refers to financial control, resources management, income pooling and spending of resources within households (Jenkins, 1994; Bennett, 2013). As this study is about the distribution of deprivation within couples, our focus in this literature review is mainly on the first aspect, though we also briefly discuss studies on how partners within couples arrange the control and management of income and spending between them.

Until fairly recently, survey or other data that directly measured the living standards of partners within couples were lacking.

While it is fairly easy to establish which individuals receive what amounts of personal income from outside the household, it is far less straightforward to measure consumption at the individual level. Many kinds of consumption are ‘public goods’ *within the household* in the sense that use by one individual does not reduce availability to other household members (housing, heating). Other consumption items are partly public, partly private (TV, car); while even for types of consumption that are in principle purely private (e.g., food), it may very difficult to assign the amounts consumed to individuals with a sufficient degree of precision. Yet, economists have tried to derive the ‘sharing rule’, i.e. the resource shares of each individual in a household, from data on household consumption and labour supply (Browning et al., 1994; see Chiappori and Meghir (2014) for a review of this line of research). Though the results of such studies often depend on the identifying restrictions<sup>2</sup>, along with a number of econometric issues, substantial progress has been made. A recent study by Cherchye et al. (2015), using US data, indicates that the shares of spouses in the full income of the couple (i.e. the potential income when both spouses would work full time, so including an implicit valuation of leisure) are generally around 50% (indicating equal shares), but with a lot of heterogeneity around this average. If the wage of the female partner goes up, relative to the wage of the male partner, so does her share in full household income. Also, their results indicate that individual poverty, based on full income, is much higher when modelled shares are taken into account than when equal shares are assumed, though there are no clear differences between the poverty rates for men and women. Another interesting piece of evidence is provided by Lundberg et al. (1997), who showed that in the UK the transfer of child allowances from husbands to wives coincided with a shift toward greater expenditure on children’s clothing and women’s clothing, relative to men’s clothing. This finding is generally interpreted as being inconsistent with the idea that household members pool all their resources<sup>3</sup>.

The most direct evidence of unequal standards of living within couples comes from surveys in which individual non-monetary indicators of material deprivation are collected. Pioneered by Townsend (1979) and Mack and Lansley (1985), the use of non-monetary indicators of deprivation (or what Mack and Lansley termed ‘socially perceived necessities’) has entered mainstream studies of poverty and social exclusion, as exemplified by the inclusion of ‘severe material deprivation’ in the headline indicator of the Europe 2020 strategy target on the risk of poverty and social exclusion<sup>4</sup>. However, these indicators usually refer to the household level. There have been only a few representative surveys in which indicators of material deprivation were collected on the individual level. One of the first of these was by Vogler and Pahl (1994) for the UK, who show that the relationship between control and management of household

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<sup>2</sup> i.e. restrictions imposed on the equations to make estimation possible.

<sup>3</sup> Though Bennett (2013) discusses evidence that challenges this interpretation.

<sup>4</sup> See [http://ec.europa.eu/eurostat/statistics-explained/index.php/Europe\\_2020\\_indicators\\_-\\_poverty\\_and\\_social\\_exclusion](http://ec.europa.eu/eurostat/statistics-explained/index.php/Europe_2020_indicators_-_poverty_and_social_exclusion)

finances on the one hand, and deprivation on the other hand, is a complex one. The authors show that in the poorest households, the wife's responsibility for managing the household finances benefits the husband, who is protected from the deprivation from which the wife suffers. Among higher-income households, there may be greater equality, depending on the allocative system. Female control of finances, though associated with greater decision-making power for women, did not necessarily protect them against financial deprivation; however, male control of finances, especially when it took the form of the housekeeping allowance, tends to protect the financial interests of men in comparison with those of women. Joint control of pooled money is the allocative system which leads to more equality in the couple.

Cantillon and Nolan (1998; see also Cantillon and Nolan, 2001) initiated and used Irish survey (1987) data that contain items of deprivation at both the household and the individual level. These items are similar to those recently agreed at the EU level to be included in the revised measure of material deprivation. Focusing on married partners who both completed the individual questionnaire, they show that spouses differ much more concerning the possession or lack of personal items (e.g. holiday, clothing, shoes, leisure) than about items that are usually shared within households (e.g. items referring to the dwelling, a car, a colour TV). A hobby or leisure activity is the item where the difference is largest. More often it is the wife rather than the husband who lacks an item. Aggregating the personal items into a summary index, and comparing the values of the index between partners, the authors show that in 46 per cent of couples there is no difference, while for 29 per cent of couples, the wife has a higher value than her husband (indicating disadvantage). In the remaining 25 per cent, the husband has a higher score than the wife. However, these differences might be the result of different tastes (e.g. having no interest in a hobby), rather than differential access to the household's resources. For this reason, respondents were additionally asked whether they were doing without the item due to lack of money (i.e. enforced lack). Divergent answers (i.e. the wife cannot afford an item, while the husband has the item or does not have it for other reasons, or the other way around) are now more common, notably for a week's holiday and a hobby. For most items, more women than men are disadvantaged. When aggregating the answers to the items into a summary score, it turns out that there is no difference between the spouses in 54 per cent of cases. Among the remaining couples the proportion where the wife has a higher score on this deprivation scale than the husband is somewhat larger than the proportion where the opposite result is found (26 vs. 21 per cent). Alternative ways of looking at the data confirm the results quoted: among many couples there is no difference in deprivation, and where there is, it is somewhat more likely that wives are disadvantaged relative to their husbands than the opposite situation; but the difference is marginal. A multivariate analysis of the gap between wife's and husband's deprivation shows that it is not systematically related to household income, social class or age, but significantly also shows that if the woman has an income of her own, the gap is smaller.

Another empirical strand of the literature looks at how couples organise their finances, and in particular at the degree to which partners keep their incomes separate or pool all their resources. Qualitative studies on this issue revealed various allocative systems, some of which imply that power and control are unequally divided between marriage partners (Pahl, 1983; 1989). Pahl (1989) distinguished four systems: the whole wage system, where one partner hands over most or all of her wage to the other partner; the housekeeping allowance system, where one partner gives the other a specific sum for housekeeping, and retains the rest; the pooling system, which involves the couple sharing all or nearly all income in a common pool; and the independent management system, where partners retain a substantial part of their own income, while contributing to a common budget. The first two systems are associated with more traditional gender roles, and in particular the breadwinner model, while the last one is often seen as more modern. Furthermore, a distinction has to be made between strategic control and day-to-day

management. The first indicates power, while the second may be more of a burden (cf. Bennett, 2013, for a review of this literature.) Ponthieux (2015), using the EU-SILC 2010 module on intra-household allocation of resources, shows that there are large differences between countries in the degree of income pooling: while in Spain, Hungary and Lithuania more than 80 per cent of all wives pool all of their income (if they have one), this percentage is less than 50 per cent in Malta, Romania, Austria and Slovakia. The proportions among husbands are in all countries quite close to those of wives, though not equal – apparently husbands and wives can have different perceptions of the extent of pooling in their household.

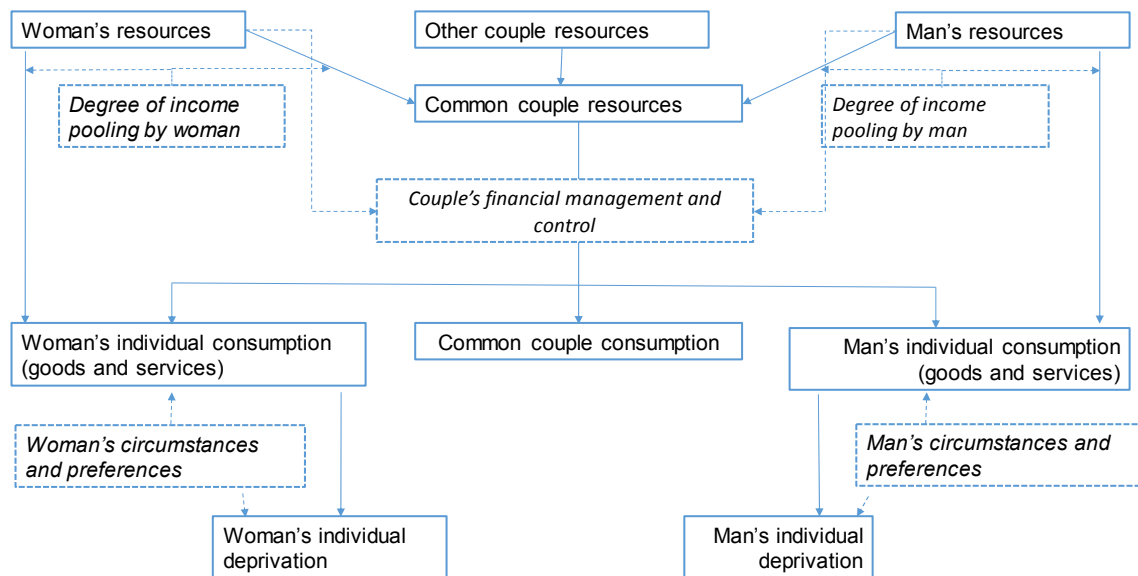
However, as Bennett (2013) emphasizes, it would be a mistake to try to read off inequality in outcomes from these allocation systems. Power in the household is not necessarily used to consume more than an equal share of the household's means. (As Korpi (2000), remarks, in rich countries it may no longer be socially acceptable for a husband to offer his wife a noticeably lower standard of consumption than his own.) This is confirmed by Cantillon, Maître and Watson (2015) who also use the EU-SILC 2010 module, but limit themselves to the Irish data. They found that the couple's financial regime did matter for individual deprivation, but not always in the way that might have been expected. In this study, no evidence was found of higher individual deprivation for the female partner when she did not work for pay or receive an individual income. Where couples pooled all their personal incomes, and controlling for level of income and other factors, the level of individual deprivation tended to be higher. Shared decision-making within couples was associated with a lower risk of individual deprivation. Interestingly, the presence and number of children had a stronger effect on individual deprivation for women than for men. Perhaps mothers try to shield their children from deprivation by spending less on their own needs. Bárcena-Martin et al. (2016), using the special module on intra-household sharing of resources included in the 2010 wave of EU-SILC, study the relation between the financial regime of a couple and deprivation on the household level. Their results suggest that sharing incomes and decisions, when controlling for the effects of other socio-economic determinants, is associated with lower levels of deprivation. When there is no income pooling, the female taking decision responsibilities is associated with similar levels of deprivation to the latter. On the other hand, a financial regime characterized by not pooling incomes and sharing decisions is related to the highest levels of deprivation, once controlling for other sociodemographic variables. This regime is linked to dual-earner households, higher household income levels, and younger or middle-aged households, and is less associated with households with children and couples in a legal consensual union. While it is too early to draw definite conclusions, the studies cited allow a few generalisations. First, studies do not establish a straightforward link between systems of control and management of couples' finances on the one hand and differences in individual deprivation between women and men on the other. Secondly, studies of individual deprivation found differences between partners in couples which are somewhat more often to the disadvantage of the woman than the other way around. But there appears to be no evidence of a substantial reservoir of 'hidden poverty' among women in couples. Thirdly, the woman having paid work or an income of her own is associated with a smaller likelihood that she is disadvantaged relative to her husband. In the rest of the paper, these preliminary conclusions will be confronted for the first time at the EU level with new evidence about the extent and determinants of differences in individual deprivation among couples.

Diagram 1 illustrates some of the factors that determine differences in individual deprivation within couples. The data do not allow us to estimate the size of the various flows and effects mapped in the diagram (mainly because there is no EU-SILC wave yet where both the intra-household allocation of resources and deprivation on the individual level were measured). The diagram may be helpful as a heuristic tool to understand the complexities involved in analysing

individual deprivation within couples, and to facilitate the interpretation of our findings in terms of the broader issue of inequality within couples.

Wives and husbands can keep all or some of their resources (earnings, social benefits, capital, company car) for themselves or put all or some of them into the pool of common household resources. The degree of (partial) income pooling is not necessarily the same for the woman and the man. Depending on who is in control of the common household budget, and the way he or she manages it, it can be spent in various ways on common household goods and services and/or individual consumption by the woman and by the man. The degree of control over the common household budget is likely to be influenced by the resources brought into the household by the partners. The goods and services that the woman and the man can obtain are of course the main determinant of their level of deprivation, though this relationship is mediated by their circumstances and preferences. For example, if neither of the partners has a smartphone, one of them may regard this as a deprivation (because her friends maintain contact through Facebook), while the other does not (because he meets his friends at a sports club).

**Diagram 1:** A conceptual framework to understand



*Note: solid boxes indicate material quantities of resources or goods and services; dashed boxes with text in italic indicate immaterial factors; solid lines indicate flows of resources; dashed lines indicate other effects. In this chart, as in the rest of this paper, we use “woman” as shorthand for female partner, and “man” for male partner.*

This framework sketched in Figure 1 and the previous paragraph has three important implications:

- Putting all resources into a common budget (‘pooling’) does not imply an equal or equitable distribution of the budget between wife and husband. Depending on the control of the common budget, one may be favoured over the other.
- Equal – or equivalent – consumption by the woman and the man does not necessarily imply that they have equal levels of deprivation. As pointed out above, circumstances may differ, and one partner may have higher standards than the other. For this reason, for individual couples, a difference in deprivation between the partners does not necessarily point to an unequal distribution of resources within that particular couple. Only systematic differences

across couples in deprivation between partners – by gender, by employment status or by other characteristics – are a clear indication of inequality within couples in the population as a whole.

- Conversely, and for the same reason, unequal consumption does not necessarily mean that one partner is more deprived than the other. Importantly, though rather obviously, in a couple with a sufficient income, the partner who gets the lesser share may still have sufficient resources to escape deprivation. This may occur often in the richer countries of the EU. Therefore, finding that in most couples neither of the partners suffers from any deprivation should not be taken to imply that there is not much inequality within couples.

### 3. DATA AND METHOD

In 2009, the then 27 EU countries and the European Commission adopted material deprivation (MD) indicators. These indicators are widely used by EU countries and the Commission to monitor progress in the fight against poverty and social exclusion at national and EU levels in the context of EU cooperation in the social field (see Guio, 2009; Fusco et al., 2012). These indicators are based on the EU Statistics on Income and Living Conditions (EU-SILC). The EU MD indicators are aggregated indicators which combine nine material and social items that are customary in all Member States. Basically, the method used is the socially perceived necessities approach introduced by Mack and Lansley (1985). These nine items are: coping with unexpected expenses; one-week annual holiday away from home; avoiding arrears; a meal with meat, chicken, fish or vegetarian equivalent every second day; keeping the home adequately warm; a washing machine; a colour TV; a telephone; a personal car.

The main limitations of these MD indicators are the small number of items on which they rely and the weak reliability of some of them. That is why a thematic *ad hoc* module on MD was included in the 2009 wave of the EU Statistics on Income and Living Conditions (EU-SILC). Guio et al. (2012) analysed the robustness of all MD items available in the 2009 EU-SILC survey (core survey plus module – covering various aspects of living conditions including housing, local environment etc.). Their analysis was both theory and data driven. From a theoretical point of view, it largely relied on the Townsend theory of relative deprivation. From a statistical point of view, the in-depth robustness analyses included tests related to the dimensionality, suitability, validity, reliability (both for individual items and for the whole scale) and additivity. This systematic item by item analysis by Guio et al. carried out at both EU and country levels identified an optimal set of 13 deprivation items - six were already part of the agreed 9-item EU MD indicator and seven are new. Among the nine items included in the current EU MD indicators, three were therefore identified as inadequate measures of deprivation in a number of countries (enforced lack of a washing machine, a TV and a telephone), and not retained. Seven items collected in the 2009 MD module also satisfactorily met the indicator quality criteria and contribute to building a robust measure of MD across the EU. These items are the inability for a person/household to:

1. replace worn-out clothes with new ones;
2. have two pairs of properly fitting shoes;
3. spend a small amount of money each week on him/herself<sup>5</sup>;

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<sup>5</sup> One might argue that having or lacking pocket money is part of the intra-couple allocation of resources, and, being neither a good nor a service, is a potential cause of individual deprivation, rather than being a part of it. However, having pocket money can contribute to a person's autonomy, and therefore to her well-being, independently of the goods and services consumed. In any case, we follow in this the selection of items for EU-SILC (see Guio et al., 2012).

4. have regular leisure activities;
5. get together with friends/family for a drink/meal at least monthly;
6. have an internet connection;
7. replace worn-out furniture.

Among the seven new items, the first six items are collected at the individual adult level (for all persons aged over 15 years). The last item is collected at the household level. The seven new items were collected in EU-SILC 2014 and since then, they have been collected annually. The 13 MD items have successfully gone through a number of additional analyses and robustness tests based on the 2014 data, including a focus on robustness over time (Guio et al., 2017). These items will now be used by Member States and the Commission to replace the current EU 9-item MD indicator.

For the first time at the EU level, the MD indicator will capture intra-household differences in deprivation among adults living together. In this paper, we will focus on the adult items to better understand the extent of intra-couple inequality.

Please note that the “register” countries where the information is only collected for one selected respondent in the household (and not for all adult members) could not be included in this analysis (Denmark, Finland, the Netherlands, Sweden). Also in the UK the adult information was collected for the whole household, via one household question, and not separately for all adults.

The analysis is obviously limited to married and cohabiting couples. Since we are interested in differences between women and men, the small number of same-sex couples was excluded from the analysis. When one or more answers from one or both of the partners were missing, the couple is not included in the analysis. Table A1 in the annexes shows the number of couples in the sample by country.

The information on adult deprivation is collected via a three-answer categories question:

“Can you tell me if:

1. You have the item;
2. You do not have the item because you cannot afford it;
3. You do not have the item for any other reason.”

Two concepts of “lack” can be defined:

In the simple lack concept, people lacking the item (categories 2 and 3) are considered as deprived, whatever the reason why they do not have the item.

In the enforced lack concept, only people who lack the item for the affordability reason (and not for any other reason) are considered as deprived. This last definition is the one retained in the large majority of publications related to deprivation and in the definition of the EU commonly agreed indicator of material deprivation. This is also the definition we use in this paper. However, we replicated our analysis using the simple lack concept instead, in order to test whether differences within couples are due to tastes or different subjective assessments of the reason why the item is lacking (cannot afford versus other reasons) or to differences in the possession of the item. It is conceivable that some partners do not want to admit that they lack an item – when the other partner has it – because they cannot afford it, in order to maintain the



illusion of a fair distribution. These results are available on demand. Our main conclusions are confirmed using the simple lack concept instead of the enforced lack concept.

Given the partly subjective nature of the deprivation questions, the mode of interviewing may be important. This varies across the selected countries (see Di Meglio, et al, 2017). Most countries use face-to-face interviewing (where answers are recorded either on paper or in a computer), though in some countries part or all of the interviewing is done by telephone. The possible effect of interviewing mode on the answers to the deprivation questions is examined in Section 5. Answers may also be affected by the presence of the partner when respondents are interviewed (see Cantillon and Newman, 2005), but we have no information on this. Furthermore, proxy interviews are allowed when a sample individual is not available for interviewing; the proxy respondent is often the partner. A proxy respondent might be hesitant to say that the reason her or his partner lacks an item is that he or she cannot afford it, especially when she or he gave earlier a different answer to the same question when it referred to her- or himself. A case could be made for excluding proxy interviews from the analysis sample. We have not done so, as that would result in a large reduction of the number of observations for some countries. Also, the resulting sample would be selective, as most proxy interviews are for persons who are at work. However, Section 6 is devoted to this issue, presenting a number of sensitivity tests of the in- or exclusion of proxy interviews.

In the next section, we will first present, for the pooled set of countries, the distribution of the nine possible combinations of answers (given the three possible answers above) among couples for each item. We then look at differences in deprivation for each item within couples by country. The descriptive analysis then proceeds by aggregating the six items into a deprivation scale for each individual, and computing the “deprivation gap”, i.e. the difference between the scale values between wives and husbands. In Section 5, we present the results of an econometric analysis of the deprivation gap between partners, showing the relationship of the deprivation gap with socio-economic characteristics as well as with some variables relating to the data collection.

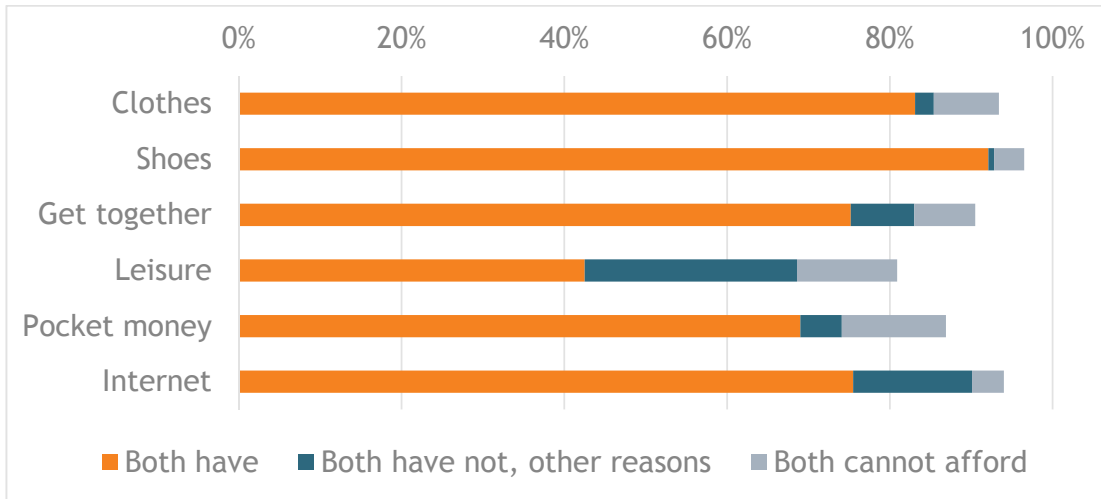
## **4. DESCRIPTIVE ANALYSIS**

### **4.3 Gender differences in access to individual items**

Figure 1 show the proportion of concurring couples, i.e. couples where both partners give the same answer to an item, for the pooled set of countries (EU Member States except the UK, Sweden, Finland, the Netherlands, and Denmark, see above).

It ranges from 81% (leisure) to 97% (shoes). The degree of concurrence for the internet is probably due to the way the question was asked. Adults were asked if they had access to internet for personal use *at home*. A large degree of similarity is therefore expected for those living under the same roof. To a certain extent, the proportion of people “having” the item affects the degree of concurrence: items possessed by nearly the whole population have a high probability of being possessed by both partners.

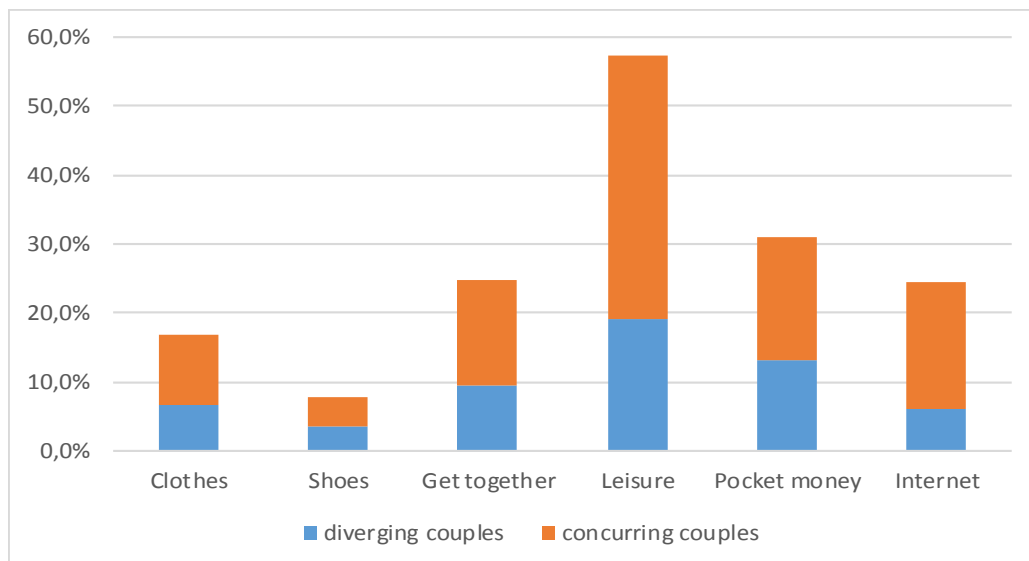
**Figure 1:** Proportion of couples providing the same responses, by answer category, EU pooled data, 2015, %



*Note these proportions are computed on the basis on the three-answer modalities of reply.  
Source: EU-SILC 2015 cross-sectional data, authors' computation.*

But even when (to control for this effect) we drop from the sample the couples in which both partners have the item, and we focus only on couples in which there is at least one partner lacking the item, there is a majority of couples where both partners do not have the item, as illustrated in Figure 2. However, a non-negligible proportion of couples diverge (at least one third of couples where at least one partner lacks the item, except for internet). It is therefore interesting to investigate whether divergence is gender-specific and what are the other factors that increase it.

**Figure 2:** Proportion of couples providing the same or diverging responses, among couples in which at least one partner does not have the item, EU pooled data, 2015, %

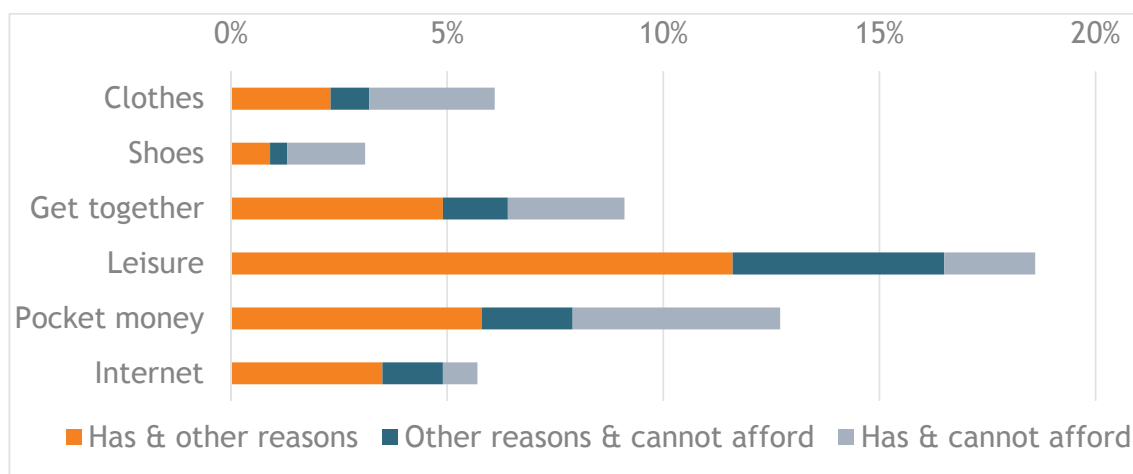


*Note these proportions are computed on the basis on the three-answer modalities of reply. For example, if one partners cannot afford the item and the other lacks it for other reasons, they are classified among diverging couples.  
Source: EU-SILC 2015 cross-sectional data, authors' computation.*

Looking at the different patterns of replies among diverging couples (i.e. couples where the partners do not give the same answer) – firstly irrespective of the gender of partners – Figure 3 shows that:

- The proportion of couples in which one partner has the item and the other does not for affordability reasons, i.e. the most potentially discriminatory situation is proportionally more frequent for items such as pocket money, getting together with friends, clothes.
- The most frequent divergent pattern is a situation where one partner has the item and the other partner lacks it for “other reasons”. This proportion reaches almost 12% of all couples in the case of leisure activities and around 5% for pocket money and getting together with friends. In such cases, differences in preferences are supposed to explain why partners do not both possess the item. According to the deprivation definition based on the enforced lack concept, these couples are not considered as diverging: both partners are considered as “non-deprived”.
- The proportion of couples not having the item but attributing it to different reasons (one partner saying that it is due to unaffordability and the other to “other reasons”) is smaller. It is, however, non-negligible for items such as leisure (5.9%) and pocket money (2.1%).

**Figure 3:** Proportion of couples by response category, diverging couples, EU pooled data, 2015, %



*Note these proportions are computed on the basis on the three-answer modalities of reply. For example, if one partners cannot afford the item and the other lacks it for other reasons, they are classified among diverging couples.*

*Source: EU-SILC 2015 cross-sectional data, authors' computation.*

Table 1 shows whether women and men have equal chances of being the “disadvantaged” partner in diverging couples. It provides the distribution of the different types of divergence, i.e. the distribution of couples among the possible combinations of answer options. The last part of the table regroups these couples according to their deprivation status (enforced deprivation). When we compare the situation of women and men in diverging couples, our results show that:

- There are more men than women who live in couples where they are the only partner having the item, whereas the partner cannot afford it. The difference is less than 0.5 percentage points for all items, except pocket money, though significantly different from zero for all items, except the internet;
- There is no significant difference between the proportion of couples where the man has the item and the woman lacks it for “other reasons” and the proportion where the

opposite is true, except for clothes and pocket money. The imbalance is, however, in favour of women for clothes and in favour of men for pocket money;

- c) In couples where both partners lack the item, there are slightly fewer women than men who attribute this lack to “other reasons” than to “affordability reasons”. The difference is significant for all items except shoes and the internet. This attenuates the gender differences in enforced lack;
- d) In total, Gender differences, though generally small, are significant and to the disadvantage of women, except for internet for which there is no significant difference. For the other items, they range from 0.2 percentage-points (shoes) to 1.9 percentage-points (pocket money).

**Table 1:** Distribution of couples according to the (non-)overlap of the respective answer of the two partners, by item, EU pooled data, 2015, %

	<b>Clothes</b>	<b>Shoes</b>	<b>Get together</b>	<b>Leisure</b>	<b>Pocket money</b>	<b>Internet</b>
<b>Diverging couples</b>	6.6%	3.5%	9.5%	19.1%	13.1%	6.1%
Has (W) – Unaffordability (M)	1.3%	0.8%	1.2%	0.9%	1.6%	0.4%
Has (M) - Unaffordability (W)	1.6%	1.0%	1.5%	1.2%	3.2%	0.4%
<i>difference</i>	-0.2%	-0.2%	-0.3%	-0.4%	-1.6%	0.0%
	[-0.4;-0.1]	[-0.3;-0.1]	[-0.5;-0.2]	[-0.5;-0.2]	[-1.8;-1.4]	[-0.1;0.0]
Has (W) - Other reasons (M)	1.3%	0.5%	2.5%	5.7%	2.5%	1.7%
Has (M) - Other reasons (W)	1.0%	0.4%	2.4%	5.9%	3.3%	1.8%
<i>difference</i>	0.3%	0.0%	0.1%	-0.2%	-0.8%	-0.1%
	[0.2;0.4]	[-0.1;0.1]	[-0.1;0.3]	[-0.5;0.1]	[-1.0;-0.5]	[-0.3; 0.0]
Other reasons (W) – Unaffordability (M)	0.4%	0.2%	0.7%	2.2%	0.9%	0.7%
Other reasons (M) – Unaffordability (W)	0.5%	0.2%	0.8%	2.7%	1.2%	0.7%
<i>difference</i>	-0.2%	0.0%	-0.2%	-0.6%	-0.3%	0.0%
	[-0.2;-0.1]	[-0.1;0.0]	[-0.3;-0.1]	[-0.8;-0.4]	[-0.4;-0.2]	[-0.1;0.1]
<b>Deprivation status</b>						
Enforced lack (M) - Non-deprived (W)	1.7%	0.9%	1.8%	3.1%	2.5%	1.0%
Enforced lack(W) - Non deprived (M)	2.1%	1.2%	2.3%	4.0%	4.4%	1.1%
<i>difference</i>	-0.4%	-0.2%	-0.5%	-0.9%	-1.9%	-0.1%
	[-0.6;-0.2]	[-0.4;-0.1]	[-0.7;- 0.3]	[-1.2;-0.7]	[-2.2;-1.7]	[-0.2;0.1]

NB: 95% confidence intervals of the differences in the proportion of couples are provided in brackets.

Source: EU-SILC 2015 cross-sectional data, authors' computation

Tables 2 and 3 present summary information by country. Table 2 presents the proportion of couples with similar responses (the percentage of *concurring* couples). This shows that the degree of concurrence is in general large, but varies a lot between countries. Malta and to a lesser extent Slovenia appear as outliers, with percentages concurring close to 100%.

**Table 2:** Proportion of concurring couples, by item and country, 2015, %

	Clothes	Shoes	Get together	Leisure	Pocket money	Internet
Bulgaria	84.6	84.0	84.9	78.8	80.8	89.7
Italy	85.1	93.4	82.1	75.3	78.9	85.1
Serbia	86.0	87.8	86.2	77.4	80.3	89.3
Latvia	88.7	90.5	91.6	82.6	90.7	94.7
Slovakia	89.0	98.0	88.8	78.7	83.2	99.7
Hungary	90.3	97.5	88.2	83.2	88.9	92.9
Romania	90.3	90.3	89.3	84.7	85.0	87.8
Croatia	90.5	97.1	90.3	75.1	79.8	90.3
Lithuania	90.8	99.3	87.6	80.3	89.4	94.8
Cyprus	91.3	98.8	96.2	74.5	90.8	86.4
Ireland	91.7	94.9	82.9	67.6	90.6	96.0
Austria	93.1	98.8	85.3	76.3	83.3	98.6
Estonia	93.6	98.7	88.8	70.9	90.5	98.3
Portugal	93.7	98.0	89.4	69.5	75.8	94.6
Poland	93.9	99.0	89.5	82.7	86.4	96.2
Czech republic	94.1	97.6	93.9	78.2	88.0	100.0
France	96.1	96.7	94.4	67.9	87.8	97.5
Belgium	96.7	98.7	93.2	84.0	93.5	97.1
Spain	96.8	99.5	92.2	83.9	85.4	94.0
Luxembourg	97.8	99.0	93.0	74.8	89.3	96.9
Greece	98.1	99.3	78.5	81.7	82.7	94.1
Slovenia	99.5	99.7	98.3	84.6	99.0	92.8
Malta	99.6	99.4	99.3	98.5	96.4	98.6

*NB: Countries are ranked according to the percentage of the first item (clothes).*

*Source: EU-SILC 2015 cross-sectional data, authors' computation*

Table 3 presents the significant differences (among diverging couples) between the proportion of couples in which the woman is disadvantaged (based on the enforced lack concept) and the proportion in which this is the case for the man, by country and by item. In other words, a negative value indicates that the proportion of couples where the woman is the only partner deprived is significantly higher than the proportion where the man is in this situation. Confidence intervals for the difference are presented in Table A2 in the annexes.

Table 3 shows that in countries where the difference is significant, the proportion of couples where the woman is the only partner deprived is higher than the proportion where the man is in this situation, showing a systematic gender-specific pattern (the only exception is for leisure in Cyprus). Table also shows that the difference (between the two proportions) is far larger in these countries than at the EU level.

Shoes and the internet are the two items for which the difference is least often significant across the EU countries. A second group is composed of items such as clothes and getting together with friends, for which the difference is significant in around ten countries. The items which lead to higher gender differences are those related to pocket money (where the difference is significant in all countries) and leisure activities (significant in 16 countries).

The countries in which gender differences within couples concern a larger set of items are: Romania (all items); and Bulgaria, Latvia, Portugal, France, Austria, Slovakia, Serbia (4 items out of 6). It is notable that the countries in which these gender differences are larger or occur for more items than the EU average include some of those with the highest overall levels of deprivation (Bulgaria, Romania, Latvia, Serbia), but also some countries in which deprivation is lower than the EU average (Austria, France). (On the other hand, at the bottom of the table we find only countries with lower proportions of people living in deprivation.)

**Table 3:** Difference between the proportion of couples where the woman is deprived and the man is not deprived of the item, and the proportion of couples where the man is the only partner deprived of the item, if significantly different from 0 ( $p=.05$ ), enforced lack, by country, 2015, %

	Clothes	Shoes	Leisure	Pocket money	Get together	Internet
Romania	-2.2%	-2.2%	-1.4%	-2.3%	-1.5%	-1.5%
Serbia		-1.6%	-2.2%	-8.6%	-1.3%	
Portugal	-1.0%		-1.5%	-7.0%	-1.4%	
France	-0.7%		-1.4%	-3.7%	-0.4%	
Slovakia	-1.7%		-1.6%	-2.3%	-1.2%	
Austria	-1.0%		-2.3%	-2.0%		-0.5%
Bulgaria	-2.3%	-2.6%		-2.0%	-2.6%	
Latvia	-2.8%	-1.4%	-1.3%	-1.4%		
Greece			-3.8%	-3.7%	-1.4%	
Croatia			-1.1%	-3.4%	-1.2%	
Hungary	-2.3%		-2.3%	-2.0%		
Slovenia	-0.3%		-0.9%	-0.3%		
Lithuania	-1.6%		-3.4%		-1.9%	
Cyprus			2.1%	-2.1%		
Spain			-0.8%	-1.6%		
Estonia			-1.1%	-1.2%		
Poland			-2.1%	-0.8%		
Italy				-1.8%		
Czech republic				-1.4%		
Luxembourg				-1.1%		
Belgium				-1.0%		
Ireland						
Malta						

*Note: Countries ordered by number of items for which there are significant differences, and when that is equal, by difference for pocket money.*

*Source: EU-SILC 2015 cross-sectional data, authors' computation*

These first descriptive results confirm the conclusions of the literature review: in a majority of couples there is no difference in individual replies to the deprivation questions. However, a non-negligible proportion of couples diverge (at least one third of couples where at least one partner lacks the item, except for internet). Among diverging couples, the percentage of couples in which the woman is the only partner who is deprived is close to the proportion of couples in which the man is in this situation at the EU level, although slightly superior, with results varying depending on the item and the country.

The next section will look at the degree of concentration of this disadvantage once the six items are aggregated into a deprivation scale.

#### 4.2 Differences in the number of items lacked

We now focus on the cumulation of deprivations. The six items are aggregated into an unweighted deprivation scale for each individual (ranging from 0 to 6). We did not weigh the items (for instance by the proportion of individuals having the item within each country), as the results are more easily interpretable without weighting<sup>6</sup>. For each couple, the difference between the sum of deprivations of the woman and the man is computed; this is “the gender deprivation gap”.

The deprivation scale cumulates the divergences at the item level, described in the previous section. In 6.5% of the couples, the number of (enforced) deprivations suffered by the man exceeds those suffered by the woman, while in 9.2% of couples the opposite is true (in total, partners have different deprivation scores in almost 16% of all couples).

The deprivation gap affects in most cases one or two items, rarely more (< 1% of the sample). In the remainder of the paper, we therefore focus on the existence of a deprivation gap, ignoring the number of items that constitutes this difference.

At the national level, Figure 4 illustrates the large country differences in the extent of divergence within couples. Panel A shows that the proportion of diverging couples is negatively correlated with the proportion of couples suffering from no lack, as suspected in the previous section. In a hypothetical country in which no adults living in couple lack any item, divergences within couples would not exist. In countries such as Bulgaria or Serbia in which only 40% of couples in total escape any form of adult enforced deprivation, the degree of divergence is the highest. Figure 3 highlights a few exceptions to this rule: Malta and Slovenia show a very low degree of divergence, as compared to other countries with a similar deprivation rate. This is also true for Romania, though only to some extent.

Focusing on couples in which at least one partner lacks at least one item, Figure 4, Panel B shows that the relationship goes slightly in the opposite direction when only couples suffering deprivation are analysed. Countries in which more couples suffer from deprivation tend to have a lower proportion of divergence *among deprived couples*. The larger the number of items lacked by the couple, the higher the probability that the partners suffer deprivation in equal measure. At the extreme, couples in which both adults suffer from all six deprivations cannot diverge at all. The relationship between the degree of divergence and the deprivation rate is, however, less steep. Countries with very different proportions of couples not suffering from any lack can reach very different levels of divergence (see Luxembourg and Portugal, or Belgium and Bulgaria, for example). Austria is the country in which the number of deprivations differs the most within deprived couples. This suggests that the cross-country variation in gender differences in deprivation within deprived couples is not merely a product of the overall level of deprivation but that other factors are also at work.

Malta and Slovenia also appear as outliers in Panel B, which raises questions about the method of data collection of the individual items in these two countries.

We will investigate these questions in the next section.

Figure 5 looks at differences by gender. It presents the proportion of couples in which the woman suffers from more deprivations than the man and the proportion of couples in which the opposite is true. It shows that there are only a few countries in which the proportion of couples in which the woman is the disadvantaged partner does not exceed the proportion in which the man is in this situation (Cyprus, and Malta).

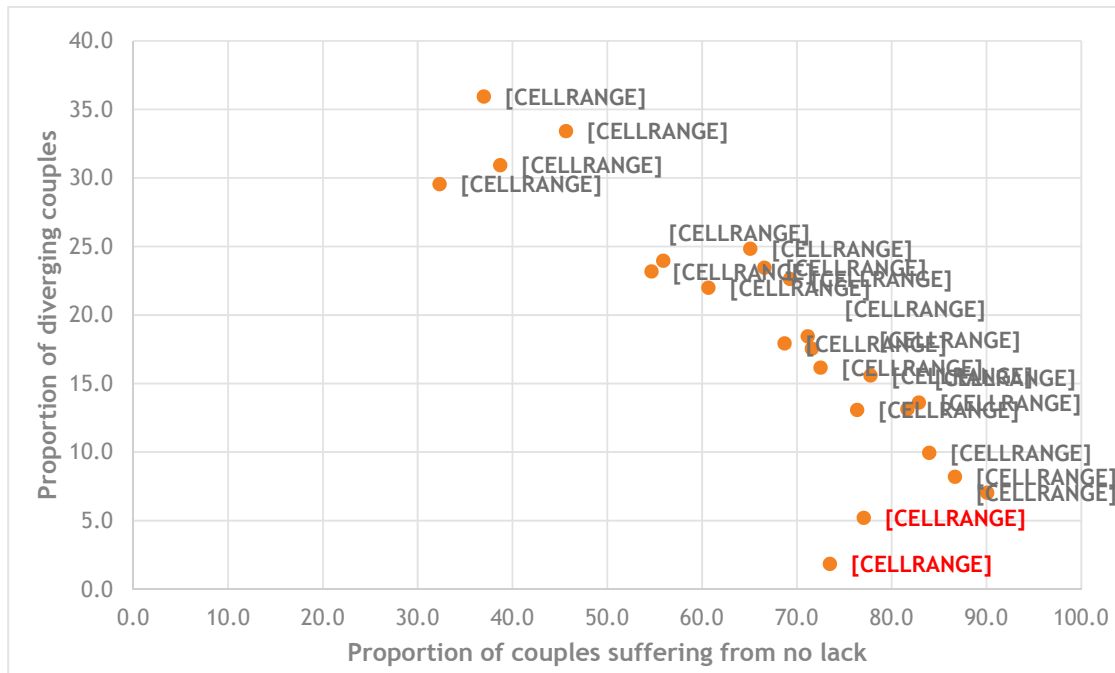
The next section will investigate the determinants of the deprivation gap.

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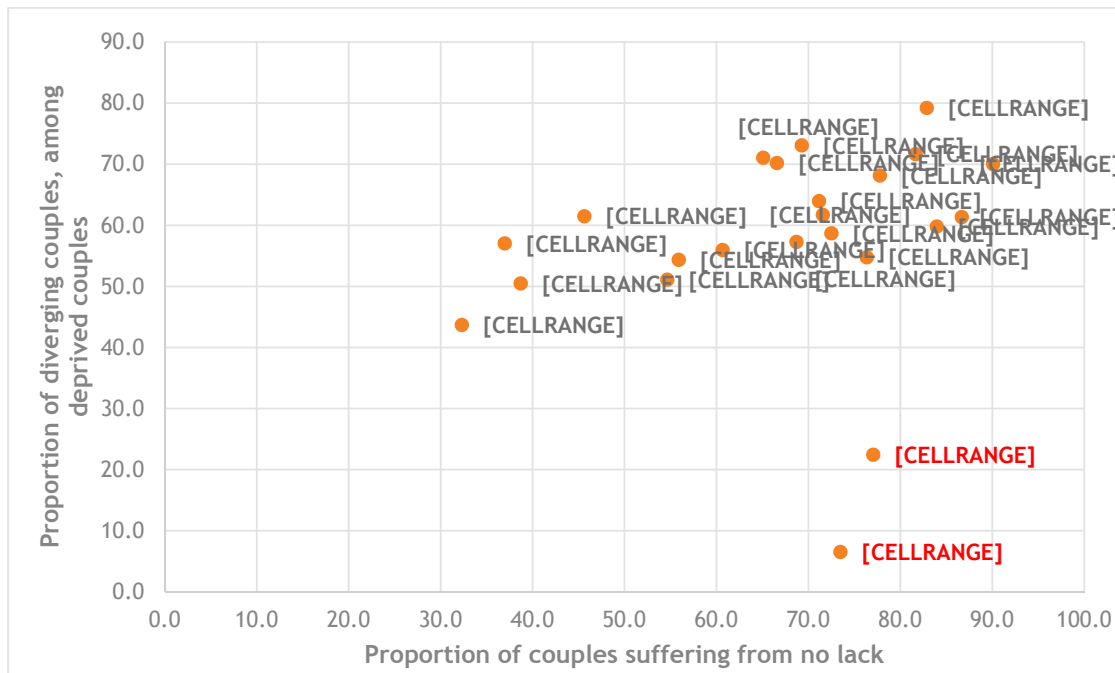
<sup>6</sup> A discussion of the impact of weighting on the EU material deprivation indicator can be found in Guio (2009).

**Figure 4:** Proportion of diverging couples, by country, 2015, %

**(a) Among all couples**



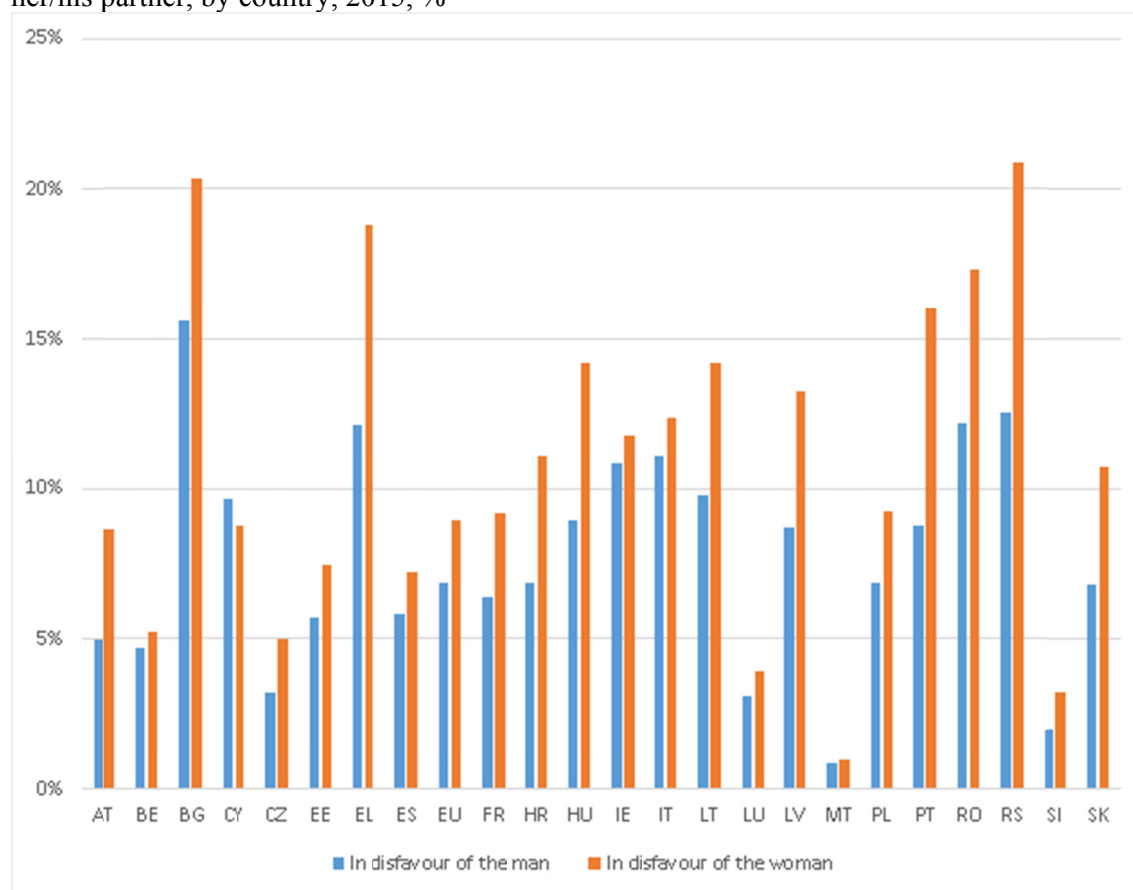
**(b) Among couples in deprivation**



NB: couples in deprivation are those where there is at least one partner lacking one item (enforced lack concept).  
 Source: EU-SILC 2015 cross-sectional data, authors' computation



**Figure 5:** proportion of couples where the woman/man suffers from more deprivations than her/his partner, by country, 2015, %



Source: EU-SILC 2015 cross-sectional data, authors' computation.

## 5. WHAT ARE THE SOCIO-ECONOMIC DETERMINANTS OF THE GENDER DEPRIVATION GAP?

As discussed in previous sections, the deprivation gap depends to a certain extent of the deprivation level of couples. When couples are not deprived of any item, their deprivation gap is, by definition, unobserved.

The deprivation items used in this paper measure only low standards of living, and does not differentiate among those whose standards of living exceed a certain threshold. Therefore, differences of standard of living between men and women when they are both above that threshold are not measured.

This is referred as incidental truncation: the deprivation gap between partners depends on another variable, namely, their deprivation level. The usual approach to incidental truncation is to add an explicit selection equation to the model of interest.

The most common approach is the Heckman two-step procedure (Heckman, 1976). First, a sample selection probit equation estimates the probability of the couple to suffer from deprivation (any of the six adult items for at least one partner). An estimate of Mills's ratio is calculated from that equation and is included in the substantive equation (in our case, the regression of the deprivation gap).

Tables 4 shows the results of this procedure. We estimated the same model for the deprivation gap at the disadvantage of the female partner, and then for deprivation gap at the disadvantage of the male partner.

Independent variables of the selection equation include:

- Household equivalised income (logarithm);
- Average age of the partners;
- Educational attainment of the highest educated partner;
- Housing costs overburden;
- Debt overburden;
- Difficulties in making ends meet;
- Work attachment of partners.

Independent variables of the substantive regression include:

- Mode of data collection (CAPI: Computer-assisted personal interviewing, CATI: Computer-assisted telephone interviewing, PAPI: paper-and-pencil interviewing; CAWI: Computer-assisted web interviewing or self-administered);
- Use of proxy interview for an absent partner<sup>7</sup>;
- Average age of the partners;
- Age difference between the male partner and the female partner ;
- Work attachment of partners;
- Share of the personal female income in the total personal income of both partners;
- Household type;
- Country fixed effect.

Note that our sample includes complex households, in which the couple live with other adults. A sensitivity analysis excluding these households do not alter our conclusion.

In the selection equation, the probability that at least one partner suffers from at least one deprivation decreases with the income level, the presence of self-employed and the education attainment. It increases with the level of financial difficulties and the overburden (housing costs, debts) in the household. Compared to couples where both partners works, those in which only one partner works (woman or man) or in which no partner works suffer from a higher risk of deprivation.

The substantive equation focuses on couples in which the probability of having at least one deprived partner is positive.

The first model explains the probability of that the woman suffer from a higher number of deprivation than the man (as compared with the probability of no gap or a gap at the

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<sup>7</sup> The person who replies for the absent person is not necessarily hi/her partner but can be another adult in the household.

disadvantage of the man). The second model explains the probability that the man suffers from a higher number of deprivation than the woman (as compared with the probability of no gap or a gap at the disadvantage of the woman). There are clearly a mirror effect between the two models.

Our results show that:

First, the use of proxy interviews has an impact on the gender deprivation gap: when the woman/man is not available to reply to the questionnaire and is replaced by another household member, this decreases the probability of the deprivation gap to her/his disadvantage and increases the probability of a deprivation gap to the disadvantage of the partner. This suggests that either the adult replying to the questionnaire minimises the deprivation status of the absent partner or interprets differently her/his deprivation situation. The odds ratios are identical for men and women. This is an important result, which has a direct impact in terms of data collection. The next section will quantify the impact of proxy interviews on the deprivation gap by country.

Second, the work attachment of wives and husbands has a symmetrical impact on the gender differences in deprivation in the sense that when a partner is at work, while the other is not, this reduces the risk of a gender deprivation gap to his or her disadvantage, while increasing it for the other partner. Couples in which no partner works and those in which both work do not differ.

Third, the share of female income in the couple's income (which groups together the personal income of both partners but does not include other household income components which may be linked to children, wealth or other household members' income) has an impact on the deprivation gap. The higher the share of the couple's income that the woman has, the higher the probability that the deprivation gap disadvantages her man rather than herself.

Fourth, the demographic variables play a modest role. The age of both partners (average age) or the age difference between partners only influence the chance of a deprivation gap to the detriment of the woman. An increasing number of children slightly reduces the risk of deprivation gap (for couple with at least two children). Perhaps the presence of children induces partners in a couple to pool and spend their resources jointly (see Daly and Kelly, 2015, for similar findings). This finding contrasts with those by Cantillon et al. (2015), who found that the presence and number of children had a stronger effect on individual deprivation for women than for men.

Fifth, the mode of interviewing has an impact, with self-administered and CAWI leading to larger gap (both sexes). The lack of privacy of some mode of interview may indeed decrease the declared level of deprivation of deprived partner.

Country fixed effects remain significant when other explanatory variables are taken into account (including mode of interviewing). Malta and Slovenia appear as outliers, with significant smaller level of gap, as already pointed out.

**Table 4:** Two-stage Heckman procedure, 2015

Selection equation (probability that at least one partner lacks one item)				
Parameter	Estimate		Pr >  t	
Intercept	2,86		<,0001	
Log household income (PPS)	-0,40		<,0001	
Both partners at work (ref)				
No partner at work	0,15		<,0001	
Woman is the only partner at work	0,29		<,0001	
Man is the only partner at work	0,20		<,0001	
Average age of the two partners	-0,01		<,0001	
Health problems	0,22		<,0001	
Difficulties in making ends meet	0,89		<,0001	
Heavy housing costs overburden	0,25		<,0001	
Heavy debt overburden	0,20		<,0001	
Self-employment	-0,13		<,0001	
High education (ref)				
Low education	0,28		<,0001	
Medium education	0,15		<,0001	
Substantive equation: deprivation gap at the disadvantage of				
	The woman		The man	
Intercept	0,16	<,0001	0,16	<,0001
Share of woman's income in the income of the couple	-0,16	<,0001	0,13	<,0001
Proxy interview for the woman	-0,08	<,0001	0,04	<,0001
Proxy interview for the man	0,00	0,688	-0,08	<,0001
Average age of the two partners	0,00	0,066	0,00	0,2831
Age difference between partners	0,00	<,0001	0,00	0,2677
Both partners at work (ref)				
Woman is the only partner at work	-0,01	0,024	0,08	<,0001
Man is the only partner at work	0,07	<,0001	-0,02	0,0011
No partner at work	0,00	0,669	-0,01	0,2501
Two adults no child (ref)				
Two adults one child	-0,01	0,179	0,01	0,3192
Two adults two children	-0,02	0,018	-0,02	0,0308
Two adults three children or more	-0,03	0,006	-0,02	0,082
More than two adults with children	0,00	0,807	0,00	0,7196
CAWI or self-administered (ref)				
PAPI	-0,02	0,192	-0,05	<,0001
CAPI	-0,03	0,002	-0,05	<,0001
CATI	0,02	0,101	-0,02	0,0249

<b>Table 4:</b> Two-stage Heckman procedure, 2015 (continued)				
BE (ref)				
AT	0,21	<,0001	0,11	<,0001
MT	-0,22	<,0001	-0,10	<,0001
RO	0,04	0,008	0,02	0,1248
CY	0,08	<,0001	0,09	<,0001
CZ	0,18	<,0001	0,05	0,0264
BG	0,17	<,0001	0,07	<,0001
IT	0,13	<,0001	0,11	<,0001
PT	0,28	<,0001	0,06	<,0001
PL	0,17	<,0001	0,10	<,0001
ES	0,06	<,0001	0,05	<,0001
EL	0,09	<,0001	0,06	<,0001
LU	0,16	<,0001	0,15	<,0001
HR	0,17	<,0001	0,08	<,0001
HU	0,13	<,0001	0,04	0,003
FR	0,21	<,0001	0,07	<,0001
SI	-0,06	4E-04	-0,11	<,0001
SK	0,15	<,0001	0,06	0,0005
DE	0,16	<,0001	0,09	<,0001
EE	0,23	<,0001	0,22	<,0001
LV	0,13	<,0001	0,06	0,0001
LT	0,07	<,0001	0,02	0,1378
<b>Lambda</b>	0,09	<,0001	0,04	<,0001
<b>Sigma</b>	0,45	<,0001	0,40	<,0001

Source: EU-SILC 2015 cross-sectional data, authors' computation.

Note: Lambda differs significantly from zero. The null hypothesis is strongly rejected, there is evidence of non-random sample selection. The positive sign indicates that (unobserved) factors that make deprivation more likely tend to be also associated with increased deprivation gaps (both sexes).

## **6. IMPACT OF PROXIES ON THE GENDER DIFFERENCES IN INDIVIDUAL DEPRIVATION**

The results in the previous section show that the use of a proxy for an absent partner tends to decrease the probability of the deprivation gap to her/his disadvantage and increase the probability of a deprivation gap to the disadvantage of the other partner. It is therefore important to quantify the impact of proxy interviews on the proportion of couples with/without divergence in deprivation.

Table 5 compares the distribution of couples according to the difference in deprivation (in favour of the man, in favour of the woman, or no difference), both when including and excluding those couples in which a proxy has been used for at least one partner. The first rows of Table 5 show that the proportion of proxies varies a lot between countries, with countries such as the Czech Republic, Bulgaria, Italy, Spain, France, Portugal, Estonia, Latvia, Lithuania, Poland and Portugal using proxies the most, especially for men. In these countries, between 26% and 43% of the male population living in couples were not interviewed directly, but via proxy interview. In general, in all countries (except Belgium, Cyprus, Greece and Italy), proxy interviews are far more often used to fill in the interview of the man than that of the woman. Ireland is the only country in which no proxies were used, and where, consequently, more than 29% of the adult sample have missing information on adult deprivation.

Table 5 shows that the impact is relatively limited on the distribution of couples in the different categories. However, in countries in which the use of proxies is high, especially for men (Estonia, France, Lithuania, Latvia, Poland), the proportion of couples in which the man is more deprived than the woman is higher among couples without proxies than in the total population of couples. Also in these countries, the proportion of couples in which the woman is in this position is lower (or equal, depending on the country). In total, the proportion of diverging couples does not change significantly when proxies are included or excluded, but the composition of diverging couples does change. This confirms the results highlighted in the regression analyses and shows that the use of proxies may affect the gender differences, i.e. making them smaller at the detriment of the absent partner when proxies are allowed. This result is, however, conjectural, as the use of proxies is not randomly distributed in the population but is correlated with paid employment and other aspects of family life and therefore also with the deprivation level and with gender differences in this (and there are indeed countries in which the impact of proxies is not as clear as in the above countries).

**Table 5:** Distribution of couples according to the deprivation gap (at the disadvantage of the woman or the man), with/without proxies by country, 2015, %

	AT	BE	BG	CY	CZ	EE	EL	ES	FR	HR	HU	IE	IT	LT	LU	LV	MT	PL	PT	RO	RS	SI	SK
<b>Proportion of proxies (all couples)</b>																							
<b>Proxy W</b>	9.31	6.4	16	6	18	18	2.77	23	15.3	29.3	4.12	0	30	13.4	14.7	11.8	18	11	28.9	6.5	12.5	4.3	1.47
<b>Proxy M</b>	13.3	6.6	29	4.6	36.7	35	2.37	26	33.3	42.7	14.5	0	30	35.6	23.4	34.3	24	35	31.2	15	17.8	11	6.35
<b>Proportion of diverging/concurring couples</b>																							
<b>All couples</b>																							
<b>1. M&gt;W</b>	5.0	4.7	15.6	9.7	3.2	5.7	12.1	5.8	6.4	6.9	9.0	10.9	11.1	9.8	3.1	8.7	0.9	6.9	8.8	12.2	12.5	2.0	6.9
<b>2. Equal N of lacks</b>	3.5	6.1	27.1	10.4	5.1	5.2	30.4	10.6	6.6	13.4	22.2	8.1	10.0	20.1	2.9	17.3	24.7	11.3	10.1	38.1	20.9	17.7	10.9
<b>3. W&gt;M</b>	8.6	5.3	20.3	8.8	5.0	7.4	18.8	7.2	9.2	11.1	14.2	11.8	12.4	14.2	3.9	13.3	1.0	9.3	16.1	17.3	20.9	3.3	10.7
<b>4. No lack</b>	82.9	84.0	37.0	71.2	86.7	81.7	38.7	76.4	77.8	68.7	54.7	69.3	66.6	55.9	90.1	60.7	73.5	72.5	65.1	32.3	45.7	77.1	71.6
<b>Divergence (1+3)</b>	13.6	10.0	35.9	18.4	8.2	13.1	30.9	13.1	15.6	17.9	23.2	22.6	23.5	24.0	7.0	22.0	1.8	16.2	24.8	29.6	33.4	5.2	17.5
<b>Difference (1-3)</b>	3.6	0.6	4.7	-0.9	1.8	1.7	6.7	1.4	2.8	4.2	5.3	0.9	1.3	4.5	0.9	4.5	0.1	2.3	7.3	5.1	8.3	1.3	3.8
<b>Couples without proxies</b>																							
<b>1. M&gt;W</b>	5.1	4.9	15.4	10.1	3.3	6.9	12.1	6.2	7.6	8.4	9.1	10.9	10.8	10.4	2.6	9.6	0.6	7.3	9.4	11.8	13.1	1.9	6.7
<b>2. Equal N of lacks</b>	3.4	6.0	26.6	9.9	4.4	4.9	30.1	10.4	6.3	15.0	23.4	8.1	10.3	21.8	2.6	18.2	24.3	11.2	10.5	38.1	21.8	17.8	11.5
<b>3. W&gt;M</b>	8.8	5.3	21.3	9.3	4.7	8.0	18.5	7.4	8.2	13.2	14.5	11.8	12.5	13.5	3.9	12.8	1.3	9.0	17.2	17.1	21.8	3.2	10.5
<b>4. No lack</b>	82.8	83.9	36.7	70.7	87.6	80.2	39.3	76.0	77.9	63.4	53.0	69.3	66.4	54.3	90.9	59.4	73.9	72.6	63.0	33.0	43.3	77.1	71.3
<b>Divergence (1+3)</b>	13.8	10.1	36.7	19.4	8.0	14.8	30.6	13.6	15.8	21.7	23.6	22.6	23.3	24.0	6.5	22.4	1.8	16.3	26.6	28.9	35.0	5.1	17.3
<b>Difference (1-3)</b>	3.7	0.4	5.9	-0.8	1.4	1.1	6.5	1.2	0.6	4.8	5.4	0.9	1.7	3.1	1.4	3.2	0.7	1.8	7.7	5.2	8.7	1.3	3.8
<b>Among couples in deprivation</b>																							
<b>1. M&gt;W</b>	27.9	25.0	24.8	33.5	23.7	31.0	19.8	23.8	24.1	21.9	19.7	33.9	33.2	22.1	29.1	22.2	2.9	25.0	24.9	18.1	23.1	8.2	24.1
<b>2. Equal N of lacks</b>	20.8	40.2	43.0	36.1	38.7	28.4	49.5	45.2	31.9	42.7	48.9	27.0	29.8	45.7	30.0	44.1	93.5	41.3	29.0	56.4	38.5	77.6	38.3
<b>3. W&gt;M</b>	51.3	34.8	32.3	30.4	37.7	40.7	30.7	31.0	44.1	35.4	31.4	39.2	37.0	32.2	40.9	33.7	3.7	33.7	46.2	25.6	38.4	14.2	37.6
<b>Divergence (1+3)</b>	79.2	59.8	57.0	63.9	61.3	71.6	50.5	54.8	68.2	57.3	51.1	73.1	70.2	54.4	70.0	55.9	6.5	58.7	71.0	43.7	61.5	22.4	61.7
<b>Difference (1-3)</b>	23.4	9.8	7.5	-3.1	14.0	9.7	10.9	7.1	20.0	13.5	11.8	5.3	3.9	10.1	11.8	11.5	0.8	8.8	21.3	7.5	15.3	6.0	13.5
<b>Among couples in deprivation without proxies</b>																							
<b>1. M&gt;W</b>	28.1	25.6	24.3	34.5	26.2	34.8	19.9	24.8	28.4	23.0	19.3	33.9	32.2	22.8	25.8	23.7	2.2	26.2	25.3	17.7	23.1	7.9	23.4
<b>2. Equal N of lacks</b>	20.0	39.7	42.0	33.8	35.5	25.0	49.6	44.0	31.2	40.9	49.9	27.0	30.6	47.6	29.6	44.8	93.0	40.8	28.3	56.9	38.4	78.1	39.9
<b>3. W&gt;M</b>	51.9	34.7	33.7	31.8	38.4	40.2	30.6	31.2	40.4	36.1	30.8	39.2	37.2	29.6	44.6	31.6	4.8	33.0	46.4	25.5	38.5	14.1	36.7
<b>Divergence (1+3)</b>	80.0	60.3	58.0	66.2	64.5	75.0	50.4	56.0	68.8	59.1	50.1	73.1	69.4	52.4	70.4	55.2	7.0	59.2	71.7	43.1	61.6	22.0	60.1
<b>Difference (1-3)</b>	23.8	9.1	9.4	-2.7	12.2	5.4	10.7	6.5	12.0	13.2	11.6	5.3	5.0	6.8	18.9	7.9	2.5	6.8	21.1	7.8	15.4	6.3	13.3

Source: EU-SILC 2015 cross-sectional data, authors' computation.

## 7. DISCUSSION AND CONCLUSIONS

This paper highlights the value in opening the ‘black box’ of the intra-household distribution of goods and services by looking at individual differences in deprivation. In conventional analyses of poverty and deprivation based on the household level, partners in a couple are assumed to have an equal living standard. But our results show that within couples, the deprivation level differs between partners in a non-negligible number of cases in a range of European countries.

We analysed EU-SILC data from the 2015 wave, which contain six deprivation items at the individual level. The proportion of couples in which the partners gave diverging answers is limited for items such as clothes (7%) and shoes (3%), but much higher for items such as leisure (19%) and pocket money (13%). In these couples, the partners do not provide the same reply to the three-option questions. Once we regroup answer categories to define the enforced lack concept (so excluding lack for other reasons), the number of couples in which there is a one-sided enforced lack (i.e. where one partner does not have the item because she/he cannot afford it, and the other has it, or does not have it for other reasons) is much more limited, ranging from 2% for shoes to 7% for leisure and pocket money. Divergence depends on the proportion of people lacking the item, as there can be no divergence when people have the item: this explains to a certain extent differences between items and countries. Furthermore, divergence can be to the disadvantage of the man or of the woman. For all items except access to the internet, the gender difference, though generally small, is significant and to the disadvantage of women. At the EU level, the difference ranges from 0.2% for shoes to 1.9% for pocket money, but is larger in some countries.

When aggregating lack on the level of items into a deprivation scale for adults, and considering the difference between the scores on this scale of partners within couples, we find that the difference is inexistent in 84% of all couples (in fact, 59% of all couples do not suffer from any enforced lack of the six items and are therefore de facto not selected to measure the deprivation gap). Where it is different from 0, the intra-couple gender deprivation gap can go in two different directions, but the situation in which the number of enforced lacks is higher for the woman (9.2% of all couples) occurs more often than those in which the man is disadvantaged (6.5%).

Our analysis therefore confirms previous studies. In a large majority of couples, no imbalance in deprivation is apparent, mainly because both partners do not lack any item. Focusing on those couples in which at least one item is lacked by one partner, the proportion of diverging couples is non negligible, it is larger than 40% in all countries (except Malta and Slovenia, which appear as outliers in our analysis and warrant further investigation). However, the percentage in which the woman is the disadvantaged partner is close to the proportion of couples in which the man is in this situation. Yet, there is clear evidence that the intra-couple gender deprivation gap is systematically biased to the disadvantage of women.

As we emphasized in the literature review, one should be careful in drawing inferences from these findings on the intra-couple gender deprivation gap for the intra-couple distribution of economic resources. For individual couples, a gender deprivation gap can occur for a number of reasons, even though partners have equal or equivalent access to resources. However, the



finding that the distribution of the gender deprivation gap is systematically skewed to the detriment of women, is an indication that deviations from an equal distribution of resources within couples disadvantage women more often than men. Conversely, the absence of a gender deprivation gap does not indicate that the intra-couple distribution of resources is equal or equitable. In a couple with a sufficiently high though unequally shared income, the partner who gets the lesser share may still have sufficient resources to escape deprivation. In other words, not finding an intra-couple deprivation gap does not constitute evidence that there is no inequality in the distribution of resources within couples. It would therefore be wrong to conclude that there is more intra-couple inequality in a wider sense in the countries where we find a large proportion of couples where the gender-deprivation gap is to the detriment of the woman or the man.

As did earlier studies, we find that the work status of the partners and their share of joint income are important determinants of the intra-couple gender deprivation gap. A larger share of income for the female partner is associated with a smaller probability of a deprivation gap to her disadvantage, and a higher chance of that her partner has a higher deprivation score than she has. The work attachment of wives and husbands has a symmetrical impact on the gender differences in enforced deprivation in the sense that when a partner is in paid employment, while the other is not, this reduces the risk of a gender deprivation gap to his or her disadvantage, while increasing it for the other partner.

The results of the multivariate analysis also suggest that, in some countries, national differences were not fully explained by the model and may be due to idiosyncratic factors.

As the quality of the data is crucial to present a correct picture of the gender deprivation gap within couples at the EU level, there are a number of questions that need to be addressed in terms of data collection, before definitive conclusions can be drawn:

- ✓ In some countries, the data are not available on the individual level for all the adults who compose the household, either because the information was collected only at the household level (UK) or because only one respondent per household (the “selected respondent”) was interviewed (DK, FI, NL, SE). It is particularly regrettable that no Scandinavian country could be included. In future, individual information on personal deprivation should be collected in all EU countries to allow national comparisons and comparable measurement.
- ✓ Among the countries for which the information is available, a few countries differ from the general pattern. Compared to the other countries, in Malta and Slovenia, the number of diverging couples is extremely low. This deserves further investigation.
- ✓ Our results show that the use of proxy interviews has an impact on the deprivation status of the (absent) person in some countries. When the woman/man is not available to reply to the questionnaire and is replaced by another household member, this decreases the probability that (s)he is considered as disadvantaged vis-à-vis her/his partner. This suggests that either the adult replying to her questionnaire minimises the deprivation status of the absent partner or that they interpret differently her/his deprivation situation. In view of the relatively high percentage of proxy interviews (which furthermore differs between genders and countries), we think that Eurostat should provide clear guidance for the use of proxies for future data collection. The

only country which did not use proxies for collecting data on material deprivation among adults has an extremely high percentage of missing values (29%, in Ireland).

- ✓ The presence of the partner or of other household member(s) during the interview may have an effect on the replies provided. Indeed, divergence in living standards within couples is a sensitive issue. Ideally, each member aged more than 15 years should be surveyed on his/her own (see Cantillon and Nolan, 1998; 2001) and proxy interviews should be avoided for such questions.

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## ANNEXES

**Table A1:** Sample size

All couples	110974
Austria	3408
Belgium	3413
Bulgaria	3077
Croatia	4204
Cyprus	3069
Czech republic	4603
Estonia	3664
France	6676
Greece	9192
Hungary	4325
Ireland	1484
Italy	10879
Latvia	2902
Lithuania	2842
Luxembourg	2154
Malta	2852
Poland	7596
Portugal	5787
Romania	4738
Serbia	4518
Slovenia	6900
Slovakia	3868
Spain	8136
United Kingdom	5205

**Table A2:** Confidence intervals for the differences presented in Table 3.

Item	Country	Difference (W-M)	Confidence interval	Item	Country	Difference (W-M)	Confidence interval
Clothes	BG	-2.3%	{-3.7%;-0.8%}	Pocket money	BE	-1.0%	{-1.7%;-0.3%}
	FR	-0.7%	{-1.2%;-0.2%}		BG	-2.0%	{-3.7%;-0.3%}
	HU	-2.3%	{-3.3%;-1.4%}		CZ	-1.4%	{-2.1%;-0.7%}
	LV	-2.8%	{-3.9%;-1.7%}		EL	-3.7%	{-4.8%;-2.7%}
	PT	-1.0%	{-1.7%;-0.2%}		ES	-1.6%	{-2.4%;-0.9%}
	RO	-2.2%	{-3.3%;-1.1%}		FR	-3.7%	{-4.6%;-2.9%}
	SI	-0.3%	{-0.4%;-0.1%}		HR	-3.4%	{-4.8%;-2.1%}
	AT	-1.0%	{-1.8%;-0.3%}		HU	-2.0%	{-3.1%;-1.0%}
	LT	-1.6%	{-2.8%;-0.4%}		IT	-1.8%	{-2.7%;-0.9%}
	SK	-1.7%	{-2.6%;-0.7%}		LV	-1.4%	{-2.5%;-0.4%}
	EU	-0.4%	{-0.6%;-0.2%}		PL	-0.8%	{-1.6%;-0.1%}
Shoes	BG	-2.6%	{-4.1%;-1.2%}	PT	-7.0%	{-8.1%;-5.9%}	
	LV	-1.4%	{-2.5%;-0.4%}	RO	-2.3%	{-3.9%;-0.8%}	
	RO	-2.2%	{-3.3%;-1.1%}	RS	-8.6%	{-10.0%;-7.3%}	
	RS	-1.6%	{-2.8%;-0.5%}	SI	-0.3%	{-0.5%;-0.1%}	
	EU	-0.2%	{-0.4%;-0.1%}	LU	-1.1%	{-2.1%;-0.1%}	
Leisure	EL	-3.8%	{-4.7%;-2.9%}	AT	-2.0%	{-3.0%;-1.0%}	
	ES	-0.8%	{-1.5%;-0.1%}	CY	-2.1%	{-3.1%;-1.2%}	
	FR	-1.4%	{-2.2%;-0.6%}	EE	-1.2%	{-1.9%;-0.5%}	
	HR	-1.1%	{-2.0%;-0.2%}	SK	-2.3%	{-3.5%;-1.1%}	
	HU	-2.3%	{-3.5%;-1.1%}	EU	-1.9%	{-2.2%;-1.7%}	
	LV	-1.3%	{-2.4%;-0.2%}	BG	-2.6%	{-4.0%;-1.2%}	
	PL	-2.1%	{-2.9%;-1.2%}	EL	-1.4%	{-2.4%;-0.3%}	
	PT	-1.5%	{-2.6%;-0.3%}	FR	-0.4%	{-0.8%;-0.1%}	
	RO	-1.4%	{-2.7%;0.0%}	HR	-1.2%	{-2.0%;-0.4%}	
	RS	-2.2%	{-3.4%;-1.0%}	PT	-1.4%	{-2.1%;-0.6%}	
	SI	-0.9%	{-1.4%;-0.4%}	RO	-1.5%	{-2.7%;-0.4%}	
	AT	-2.3%	{-3.3%;-1.2%}	RS	-1.3%	{-2.3%;-0.2%}	
	CY	2.1%	{0.8%;3.5%}	LT	-1.9%	{-3.3%;-0.5%}	
	EE	-1.1%	{-2.1%;-0.1%}	SK	-1.2%	{-2.0%;-0.3%}	
	LT	-3.4%	{-5.2%;-1.6%}	EU	-0.5%	{-0.7%;-0.3%}	
	SK	-1.6%	{-2.7%;-0.5%}	RO	-1.5%	{-2.7%;-0.2%}	
	EU	-0.9%	{-1.2%;-0.7%}	AT	-0.5%	{-0.8%;-0.2%}	
			Internet				

Source: EU-SILC 2015 cross-sectional data, authors' computation.