European Commission

SCIENCE FOR POLICY BRIEFS

Like marries like*

Headlines

- The sharp decline, since the turn of the millennium, in the proportion of individuals cohabiting with or married to a partner with a different level of educational attainment may be a sign of the **weakening of the 'social glue'**.
- A **'preference for homogamy' has been on the rise** in five countries analysed (France, Hungary, Portugal, Romania and the USA).
- Some of the **commonly used indicators of homogamy obscure these trends**.

The context: the weakening of the social glue?

There are some indications that **Western societies became both more atomised and polarised** during the decade covering the Great Recession. Some of these signs are captured in Table 1, which presents information on changing marriage patterns between roughly 2000 and 2010 in a set of five countries for which data are available: France, Hungary, Portugal, Romania and the USA. First, the share of single people has been on the rise in all five countries (a sign of *atomisation*). Second, the proportion of couples in which both spouses have a tertiary education diploma has been increasing in all five countries (see also Figure 2). Third, the proportion of young individuals cohabiting with or married to a partner with a different level of educational attainment has been declining in France, Hungary, and the USA. Together **these trends may signal a weakening of the 'social glue'** connecting individuals across different educational groups. As such, they may represent an impending challenge to the European Union objective of building a more egalitarian and resilient society.

What drives marriage patterns?

In principle, who marries whom and who remains single depend both on individual preferences and on the 'supply' of potential partners of a certain type, among other factors. For instance, the large number of couples in contemporary societies in which both partners have completed tertiary education can be attributed partly to **changing marital preferences in society** and partly to the **growing numbers of men and women with a third-level diploma.** Therefore, the raw statistics on homogamy presented in Table 1 give an incomplete picture of the dynamics of marital preferences (see the 'Quick guide' for a definition of terminology around marriage and mating).

Table 1. Increasing prevalence of singlehood and homogamy

	Percentage of young singles (among young individuals)		Percentage of couples where both spouses have a diploma (among couples)		Percentage of young individuals in educationally heterogamous relation	
Census wave	about 2000	early 2010s	about 2000	early 2010s	about 2000	early 2010s
France	44	50	17	30	24	20
Hungary	41	55	8	17	19	14
Portugal	32	48	6	16	18	20
Romania	31	36	6	18	20	20
USA	40	48	18	24	17	15

Source: Census data from IPUMS (see the 'Quick guide').

To understand the relative strength of the drivers of marital patterns, the paper on which this brief is based broke down the changes in various measures of homogamy into two main factors. One captures the effect of changing education levels in society;

*This brief is based on the JRC report *Changing educational homogamy: Shifting preferences or evolving educational distribution?*, Anna Naszodi and Francisco Mendonca, JRC Working Papers in Economics and Finance, forthcoming. This brief can be downloaded from: https://ec.europa.eu/jrc/en/research/crosscutting-activities/fairness.

Quick Guide

Throughout this policy brief, the term marriage refers to both *de jure* and *de facto* marriages i.e., official marriages and cohabitations declared in the census.

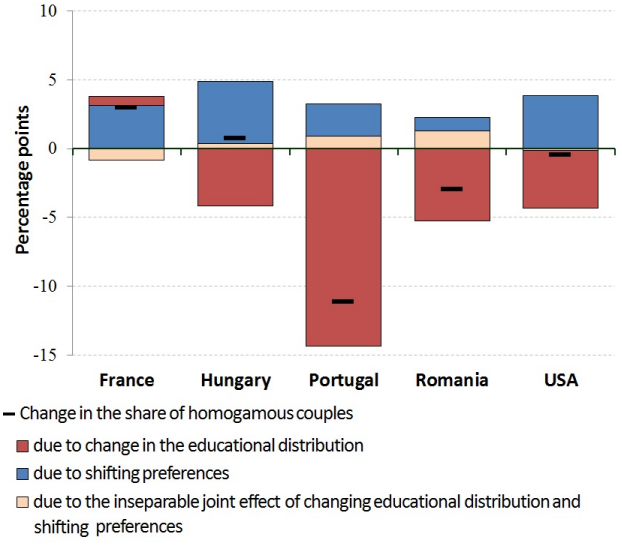
The study uses census data sourced from the Integrated Public Use Microdata Series (IPUMS). It covers the education level of spouses for only a few European countries. In order to have a robust view on the changing marriage/cohabitation patterns in the Western world, the set of European countries is complemented by the USA. The earlier set of census data are from the years 1999 (France), 2001 (Hungary), 2001 (Portugal), 2002 (Romania) and 2000 (USA). The observations from the 2010s are from 2010 (USA) and 2011 (all other countries). The data for the European countries are the most recent in the IPUMS. The sample covers young individuals aged 25 to 39 years and couples (married or cohabiting) in which the men are aged 25 to 39 years.

Measuring marital preferences is challenging. The study applies two models. One is a statistical model relying on the *Liu–Lu measure* and the *Liu–Lu matrix*; the other is a structural model used to test the robustness of the results obtained with the statistical model.

The Liu–Lu measure is based on a dichotomous variable describing partners' educational attainment (Liu and Lu, 2006). As this measure is invariant to a class of changes in the educational distribution, it is best understood as mirroring only preferences. The Liu–Lu matrix is an extension of the Liu–Lu measure, by Naszodi and Mendonca (2019), which allows for multiple education levels to be studied. In the statistical model, there are no single people as all men and women are assumed to be matched.

In contrast, the structural model developed and applied in the paper accounts for single people. Moreover, it models both voluntary singlehood (one prefers to stay single) and involuntary singlehood (one prefers to be matched, but is not). In that model, the *preference for the partner's* education level and for remaining single are estimated from the distribution of the search criteria of the users of a dating website and the actual number of singles in the population.

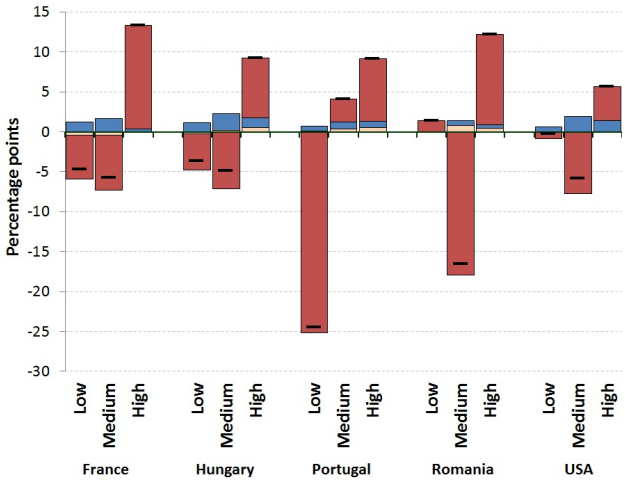
Figure 1. Breakdown of changes in the aggregate measure of homogamy between ca. 2000 and the early 2010s



Note: Homogamy is measured by the proportion of homogamous couples with respect to all couples. The preferences are captured by the Liu-Lu matrix (see 'Quick guide').

the other, the effect of changing preferences for a partner's education level, or for having a partner at all – what we call a **'preference for homogamy'**. This second factor can also be interpreted as the effect of the changing perceived social distance among people with different education levels.

Figure 2. Breakdown of changes in the measures of homogamy specific to people with certain educational attainments between ca. 2000 and the early 2010s



Note: Homogamy is measured by the proportion of couples in which both spouses have (1) low (less than high-school degree), (2) medium (high school degree), or (3) high (third-level) education levels. The preferences are captured by the Liu-Lu matrix (see 'Quick guide').

Measures of homogamy include some that are specific to people with a given education level, such as are reported in Table 1. But homogamy can also be captured by a simple aggregate measure – the

proportion of couples in which the partners have the same level of education. This aggregate measure shows diverse dynamics in the countries under study since about the turn of the millennium (see the black markers in Figure 1): homogamy has been increasing in France, while decreasing in Portugal and Romania.

However, the analysis suggests that the second factor, the 'preference for homogamy', has made **individuals more inclined to mate with others of similar educational characteristics** in all five countries (see the blue bars in Figure 1). For instance, if the distribution of educational attainment of both women and men had remained stable over time in Hungary, the share of homogamous couples would have risen by almost five percentage points between 2001 and 2011. This finding is true whether or not the option of remaining single is considered (see the 'Quick guide').

It should be noted that **the universally increasing 'preference for homogamy'** identified **can be obscured** by some commonly used indicators: the raw statistic, the proportion of homogamous couples, has even declined in some countries (Portugal and Romania) as shown by Figure 1. Similarly, preferences do not seem to matter when considering only the share of homogamous couples with a given educational level, as changes in this statistic are driven mostly by the shifting educational composition of society (see Figure 2).

The social implications of an increasing 'preference for homogamy'

The rising 'preference for homogamy' could signal **an increase in the perceived or objective social distance among marriageable men and women of different education levels**, but also, by extrapolation to other social ties, a growing prevalence of homophily – a tendency to forge strong social connections with people sharing similar characteristics.

Can the continuing expansion of education help?

The atomisation and polarisation of societies are complex, interlinked phenomena with no ready solution. The analysis suggests that the proportion of homogamous couples would have declined as a result of changing educational distributions in four countries out of the five (all but France) if marital preferences had not also changed over time (see the red bars in Figure 1).

Additional analysis (not presented here) shows that if the educational levels of women had increased to the same extent as those of men, the proportion of couples in which the partners had identical educational attainment levels would have decreased. That would seem to suggest that further expansion of education might help to mitigate the polarisation of society, even if the educational gender gap remained unchanged.

In practice, however, the increase in education levels over the investigated period has been accompanied by an **increase in the proportion of single people**. This is probably because more highly educated people tend to be more 'picky' about their partner's education level and less financially dependent on a partner. They may therefore increasingly opt to remain single: meaning that **an optimal choice for the individual** might contribute to **a potentially suboptimal outcome for society**.

Related and future JRC work

The 'fairness' initiative of the JRC has inspired an active research agenda on topics related to this policy brief. A recent 'science for policy brief' entitled 'Loneliness – an unequally shared burden in Europe' finds people with less schooling and those without a partner to be more prone to loneliness. Neither involuntary singlehood nor loneliness are peculiar to the elderly. Both the increasing prevalence of singlehood and loneliness could be read as a sign of the atomisation of society.

The JRC's research agenda covers the link between marital patterns and household income inequality, the role of homophilic preferences in residential segregation, and mobility across and within generations. In addition, the JRC is engaged in research that aims to disentangle and sort the factors underlying changes in the equilibrium of various markets into two sets: one capturing shifting preferences, and the other, evolving circumstances and constraints.

This brief is one of a **series of 'science for policy' briefs** reporting on recent JRC research on various aspects of fairness. **A comprehensive report on fairness** will be published in 2019.

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