The European Marriage Pattern and Its Measurement

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We review different interpretations of the European Marriage Pattern (EMP) and explore how they relate to the discussion of the link between the EMP and economic growth. Recently Dennison and Ogilvie have argued that the EMP did not contribute to growth in Early Modern Europe. We argue that the link between the EMP and economic growth is incorrectly conceptualized. Age of marriage is not a good scale for the degree to which countries were characterized by EMP. Rather, the economic effects of the EMP should be seen in the broader context of how marriage responds to changing economic circumstance.

Do institutions matter for economic growth? And which institutions enhance economic development and which impede it? This is a fascinating debate dominated by representatives of New Institutional Economics, such as Douglass North (1981), Avner Greif (2006), and Daron Acemoglu, James A. Robinson, and Dan Woren (2012), who have argued that institutions are the main drivers of economic change, and more specifically, that certain Western European institutions help to explain the "Rise of the West." This assessment has not gone unchallenged. In fact, Sheilagh Ogilvie has criticized these views in a number of important articles and books (Ogilvie 2007, 2011; Edwards and Ogilvie 2012). Her main point is that we should not assume that "whatever is, is right," or more specifically, that institutions that exist in dynamic economies contribute to development (Ogilvie 2007). She has particularly concentrated on the (dis)advantages of guilds (and other trade related institutions) to make this point (Ogilvie 2008), but recently—in the

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article co-authored with Tracy Dennison discussed here—has focused on the European Marriage Pattern (EMP), in a similar critique.

In what is now a classic article, John Hajnal (1965) argued that an EMP can be identified on the basis of a number of distinctive features: high age of marriage for women, a high percentage of singles, and a low percentage complex households (as most households are nuclear).[1] Hajnal found these features in Europe, west of the famous Hajnal line, running from Trieste to St. Petersburg. The area west of the Hajnal line also coincided with those regions that experienced more economic growth. It is the coincidence of these two divisions that has led to discussion of the role of the EMP as one of the factors contributing to the long-term economic performance of the region, and thus as an institutional determinant of the Great Divergence.

In a recent article, Dennison and Ogilvie (2014) test these ideas by looking at the correlation between the features of the EMP and the pattern of economic growth in early modern Europe. Operationally, they subdivide countries into three categories: pure, moderate, and extreme forms of the EMP based on a large dataset describing country characteristics. Their conclusion is that the presence of the EMP does not explain economic growth. Thus, this institution, as such, does not seem to matter.

We would argue that this result is based on a particular reading of the EMP. As described by Hajnal and by Dennison and Ogilvie, the EMP is distinguished by a fixed set of characteristics: high age at marriage, high percentage of people never marrying, and a high percentage of nuclear families. Characterized this way, one can generate an index of countries as is done by Dennison and Ogilvie. This is an interpretation based on levels. Yet it is very important to realize that the EMP can be, and we would suggest, should be conceived of as a dynamic system. The age of marriage, the percentage never marrying, and the structure of the family, are each the product of the interaction of family structure with economic conditions.

In a set of articles (De Moor and van Zanden 2010; Carmichael, De Moor, and van Zanden 2011; Carmichael and van Zanden forthcoming), we argue that the EMP enhanced economic growth by restraining population growth (the classical argument found in Hajnal's original contribution), by strengthening the position of women, by enhancing human capital formation (of women and their offspring), and by encouraging women and girls access to labour and capital markets.

[1] Hajnal also mentioned a large share of the population working as life-cycle servants and a low age gap between marriage partners.

Hajnal's hypothesis of the EMP can be seen as a special case of the more encompassing theory of the family system. This broader theory—mainly developed by ethnographers, sociologists (such as Todd 1985, 1987), and demographers—maintains that there are important international (and regional) differences in the norms and values that determine behavior at the micro level concerning marriage, family, reproduction, and upbringing, which tend to persist over time, changing only slowly and in a highly path dependent way. Family life in central Africa is organized differently than in China or Western Europe, and the various institutions (or "rules of the game") determining behaviour at the micro level are to some extent interdependent and form a coherent whole. This clustering of institutions makes it possible to use the concept of a family system to describe sets of more or less coherent institutions. Indeed, the literature on the EMP has given rise to a large debate about the classification and regional variation of such family/marriage systems in Europe, focusing on the nuclear family, the stem family, and the extended family as the main systems to be distinguished (Laslett and Wall 1972; Engelen and Wolf 2005). An extended classification for family systems of the world was developed by Emmanuel Todd (1985, 1987).[2]

The institutional arrangements have a substantial impact on behaviour at the micro level: it matters if marriage is arranged and girls marry at age 12 or if it is based on consensus and marriage is at age 25. One of the links between the family system and such "societal outcomes" is the degree of agency (autonomous decision making power) women have in a family system. In "Girlpower" (De Moor and van Zanden 2010), we argued that the EMP was based on consensus and neo-locality as the two core principles. This resulted in, and was a reflection of, a relatively high degree of female agency. By contrast, in most pre-modern family systems female autonomy is quite limited. Consensus, introduced by the Catholic Church as a norm, meant that the young woman (and the young man) had to agree with the choice of a marriage partner, or actually engaged in the search for a partner herself, which strengthened the position of (young) women. Neo-locality meant that partners set up an independent household after marriage, and were not living with either set of parents, which created opportunities for autonomous decision making by husband and wife.

Female agency is, moreover, an important driver of development. Many studies have demonstrated that because the opportunity costs of childrearing for women differ from those of men, as they are the ones who

[2] See also the more extensive working paper on which this reply is based, which presents an alternative classification of family systems, a related method for measuring female agency that they allow, and link this to the explanation of the Little Divergence (Carmichael et al. 2015).

bear most of the costs of having and rearing children, high female agency tends to result in lower fertility and higher levels of human capital formation. A central hypothesis in this literature is that there are strong links between the level of female education, women's demographic behaviour (in particular fertility), and the level of investment in the human capital of the next generation; the now "quantity" to "quality" trade off (Becker 1960; Becker and Lewis 1973; Becker and Tomes 1976; see also Schultz 1961). The idea of the quantity-quality trade-off is that parents choose to have fewer children, but increase investment in the human capital of those fewer children. This trade-off is driven by the opportunity cost of childrearing for women. Thus, more female agency and greater say by women in decision making at the household level will enhance quality over quantity of offspring. Moreover, the higher the level of female education, the larger the costs will be of having more children, in terms of their productivity and the opportunity costs of their time (Becker 1965). These arguments have received support from modern demographic research (e.g., Becker, Cinnirella, and Woessmann 2010; Vogl 2013; Rosenzweig and Wolpin 1980; Rosenzweig and Zhang 2009). It has also been demonstrated that the level of education of children is determined to a more significant extent by the human capital of the mother than of the father (Brown 2006). Moreover, the valuation of children, and especially son preference, differs between family systems and has a direct impact on the quantity-quality trade-off (Mason 2001). Thus there are close connections between family systems, gender inequality, fertility, and human capital formation at the micro level; or in other words, female agency is an important driving force behind the quantity-quality trade off.

Against this background, we analyzed the EMP as a family system characterized by consensus and neo-locality as the two key principles. Related and perhaps almost as important is that women can own property and have a share in inheritance, that marriage is strictly monogamous (even, de jure, for the elite), and exogamous (one marries outside the kin-group, leaving more room for choice). These rules strengthen the position of women. This analysis differs substantially from Hajnal's classic interpretation of the EMP. As we noted above, he focused on a number of features that were characteristic of marriage in Western Europe between 1600 and 1900, in particular high ages of marriage for women (over 23 years on average), a high share of single women, and a large group of life-cycle servants. These characteristics are sometimes taken as a scaler measure. We argue that these features result from the underlying institutions and the interaction of those institutions with economic circumstances.

There is yet another strand of literature that analyses the EMP as a "homeostatic regime"; this regime not only limits population growth (via the postponement of marriage by women ages 23–27, and a high percentage never marrying), but also stresses that age of marriage (and share of singles) responds to economic pressures (Wrigley and Schofield 1981; Clark 2007). When neo-locality is the norm, couples have to save in order to set up a household after marriage. In this situation when real wages are high and the demand for labour is booming, age of marriage will be lower than when wage levels are low. In other words, the age of marriage is a result of the degree of economic stress faced by men and women in the labour market. Demographic behaviour will adapt to a situation of high pressure (low employment and low real wages, land scarcity) as much as to one of low pressure (land abundance and high real wages). Thus a low age of marriage could be the result of very high wages or lack of consensus.

These perspectives on the EMP are relevant for understanding the way in which Dennison and Ogilivie test the hypothesis that EMP contributed to the economic development of Western Europe before the Industrial Revolution. They define the EMP as a system with high average age of marriage of women, a large share of singles and nuclear (non-complex) households, and that the degree to which these features appear makes a country more EMP-ish. Taking the characteristics of the EMP as fixed levels in a system, rather than as outcome variables that change with the changing nature of economic circumstances is, we argue, the wrong specification.

There are also some more particular issues with the way that the data in the Dennison and Ogilvie database have been used. For some countries the observations are based on a few, even single observations. Of the 40 regional units they cover, more than one-fourth have 10 observations or less for female age at first marriage over the whole period.[3] Additionally, they do not seem to have weighted the observations for the population density of a given region to come to a national value.[4] Although their paper presents a far-ranging, but at the same time patchy, summary of the numbers available in the literature, they do not appear to have incorporated the recent proliferation of databases of demographic information at the individual level, often made available via websites (such as the Mosaic, NAPP, and IPUMS, and the EHPS network).[5]

[3] Croatia, Belarus, Baltics, Iceland, Italy (all), Malta, Romania, Serbia, Slovakia, Slovenia, Spain (all), Ukraine.

[4] The earlier working paper version of the paper presented a more complete set of summary statistics than the currently published paper does, but it is unclear what has changed between the calculations in the working paper and those in the final version.

[5] See for an overview of datasets: http://www.ehps-net.eu/databases.

More importantly is that their interpretation of the data is based on a serious misunderstanding of the literature. Perhaps it is possible to interpret Hajnal's version of the EMP as arguing that the EMPishness of a country increases with the average age of marriage and the share of singles in the population. The key issue is that the average age of marriage is the result of two factors: whether or not marriage is based on the underlying rules/principles primarily consensus and neo-locality, and the standard of living of the population, potentially resulting in further postponement of marriage. If an economy is highly successful in generating economic growth and increasing the standard of living thanks to, amongst other factors, the EMP, this will result in relatively low ages of marriage, that is, low within the context of marriage behaviour based on consensus, i.e., around 20 years. This was the situation in the late Middle Ages after the Black Death, when (we argue) consensus became the norm for large parts of the population of North Western Europe, but real wages and employment opportunities were such that it was relatively easy to marry. The available data show an average age of marriage of 18–21 years for both England and Holland (De Moor and van Zanden 2010, pp. 16–17; Dennison and Ogilvie 2014, p. 662, also find a significant lower age of marriage for the sixteenth century).

The sixteenth century price inflation brought to an end this favorable situation—although real wages in the Netherlands and England declined less than those elsewhere in Western Europe, they did go down. There is substantial evidence pointing to a strong rise in age of marriage during the sixteenth century—not because marriage institutions became more EMPish (which they did not, in fact the Reformation and the Counter-Reformation strengthened the position of parents), but due to the increase of economic stress resulting in the deterioration of living standards.[6] From our agency-based perspective the rise in age of marriage due to the decline in real wages in the sixteenth century was the result not a strengthening of the EMP but economic stagnation.

A similar example can be derived from the emigration experience of men and women in early modern Europe. When emigrants from the North Sea area settled in the Cape Colony or North America, they did not change their values and norms concerning marriage behaviour (consensus remained the central notion), but they soon began to marry much earlier due to the different economic circumstances. In these parts

[6] Dennison and Ogilvie (2013) also present fifteenth-century evidence that points in the same direction: the average age of marriage of the fifteenth-century studies is 18.8 years, for the sixteenth century it is 21.8 years, and for the seventeenth century 24.8 years, confirming the rise in age of marriage during the period in which real wages decline steeply; see for this link also Wrigley and Schofield (1981).

of the world land was abundant and real incomes were relatively high. In the Cape Colony, for example, mean age of marriage for women was as low as 19–20 years during the eighteenth century (perhaps it is not a coincidence that this is comparable to the level found in late Medieval Europe) (Cilliers 2013).

In other words, women's average age of marriage is influenced by both the economic circumstances and the underlying institutions. The introduction of the consensus marriage may have resulted in a strong rise of the age of marriage (say from 12–16 years to 18–30 years), but within the EMP a lot of variation was possible, dependent on the employment prospects and the real incomes of the working population. The other indicators (share of singles and of complex households) used by Dennison and Oglivie suffer from the same problems: they are endogenous and measure both the presence of the institutions underlying the EMP and the large degree of variation within and outside the EMP. It is therefore no accident that Dennison and Ogilvie do not find a correlation between economic growth and marriage ages. This is exactly what we would expect. Economically successful regions with EMP institutions will have lower marriage ages than stagnating EMP regions. The growth spurt that began in England after 1650 and that brought about the Industrial Revolution of the late eighteenth century, resulted in a long term decline of marriage ages, whereas at the same time, when the "Golden Age" of Holland turned into a "silver" eighteenth century, ages of marriage went up (Wrigley and Schofield 1981; Van der Woude 1980).

Dennison and Ogilvie have, in our view, misunderstood the EMP hypothesis about the relationship between this family system and economic development. Hajnal does not postulate that there is a simple, linear relationship between the basic features of the family system (age of marriage, share singles, and share of complex households) and economic development. It is immediately clear from the fact the (for example) age of marriage is also determined by the standard of living of the population, that this relationship is not linear. So their failure to find a clear link between these features and economic development is exactly what might be expected.

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