The Western European marriage pattern and economic development ☆

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ABSTRACT

For several centuries before the First World War women's age at first marriage in the west of Europe was higher than in the east (and in the rest of the world). In their low mortality regimes Western Europeans chose lower fertility in part through a higher female age at marriage. This allowed women to increase their human capital both formally and informally in the years before child bearing so that more informed mothers brought up better educated offspring. The demographic pattern influenced the stock of human capital and directly contributed to Western Europe's development advantage. The predicted relations of this economic model of the household are tested with two datasets, one at the county level for England for the second half of the nineteenth century and the other at the national level for Europe 1870–1910.

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1. Introduction

A distinctive feature of the Western European family in the three or four centuries before the First World War was the late age at first marriage of women (Hajnal, 1965). Even more apparent by the nineteenth century was Western Europe's economic pre-eminence (Landes, 1998; Broadberry and Gupta, 2006). The present paper explores the relationship between these two European characteristics.

Physical capital in the pre-industrial world consisted largely of buildings. Not until the railway age of 1840s did physical capital impact substantially upon an economy (Feinstein and Pollard, 1988). Instead early sustained economic growth is usually attributed to technological ingenuity (Von Tunzelman, 2000 130). Ingenuity suggests human capital was a source of innovation, and, in the absence of widespread schooling, there was also a key role for the family in informal as well as formal education.

In addition, the family, or more precisely family formation, contributed to pre-industrial economic–demographic equilibrium. Balancing the size of the population against the productive potential of the economy was a vital means of maintaining living standards in pre-industrial economies (Wrigley and Schofield, 1989 ch 11). T.R.Malthus (1830) observed that the 'prudential restraint on marriage' achieved such an equilibrium with a fixed agricultural area in the 'Old World', and was unnecessary amid the abundant land of the 'New World'. The customary justification for 'restraint', later average female age at marriage and a higher proportion remaining unmarried, in Western Europe was the need to accumulate or acquire sufficient resources to create a separate household for a married couple.

In their recent 'survey and speculation' De Moor and van Zanden (2010) identify the defining traits of Hajnal's 'European Marriage Pattern' as a greater than usual power balance between marriage partners, weak parental authority, and separate households. These characteristics led to emphasis on consensus and narrow spousal age gaps – what Stone (1977) called the 'companionate marriage' – driving up the average age at marriage and creating high female celibacy. Individual search for a partner required attaining an age of 18–20 at least, whereas arranged marriages could be set up for younger persons. De Moor and Zanden note that north west European parents invested heavily in their children and achieved high literacy rates. Like Voigtländer and Voth (2009) they stress the critical role of the Black Death, not conceding Hallam's (1985) contention, based on the Lincolnshire fenland, that marriage ages were high already before 1348. But they differ in their emphasis on the plague's boost to surviving women's labour market position. The European Marriage Pattern, De Moor and Zanden observe, was initially limited to the north west. In southern Europe, exemplified by Italy, it did not emerge so strongly; women in Florence still married in their late teens during the 15th century.

The end of the European marriage pattern diverged as much between countries as the onset. The Revolution of 1789 set France on a different demographic course from the rest of Europe (McPhee, 2006; Spagnoli, 1997). But the fundamental behaviour underpinning the demographics was still plainly operating in most countries around 1900, as the East–West European comparison shows. Birth rates in the late-marrying East European Czech and Baltic provinces were just as low as those in the late-marrying West European countries — it was the early marrying Balkans that differed (Sklar, 1974). Hajnal (1965) observes that the First World War reinforced a shortage of marriageable men already established by emigration, thereby temporarily increasing female celibacy and age at marriage. Unsurprisingly the turbulent half century after 1914 that saw such enormous social, economic and ideological changes in Europe, also eventually eliminated the 'European Marriage Pattern'.

Why the marriage custom emerged and what consequences flowed from it is illuminated by an economic theory of the family or household, particularly as concerns the production of human capital. Human capital is often judged critical to economic growth and development (Mankiw et al., 1992; Rebelo, 1991; Sianesi and Van Reenen, 2003). In a historical context a recent hypothesis has been that economic growth was triggered when technical progress changed so as to boost the returns to education at the beginning of the industrial revolution (Galor and Weil, 2000). In the 1840s private returns to investment in male literacy were higher than those on alternative investments in Britain (Mitch, 1984), consistent with such a shift in technical progress, or with a persistent market failure. An alternative hypothesis is that technical progress widened the gap between child and parental wages, encouraging more investment in children's education and less child labour (Hazan and Berdugo, 2002).

Both hypotheses appeal to an exogenous technical change in the nineteenth century triggering investment in human capital. However there is evidence that European sustained and relatively heavy investment in education began earlier than the nineteenth century and was not exclusively commercially motivated (Reis, 2005). Since the 'great divergence' between Western Europe and the rest of the world (Broadberry and Gupta, 2006) also began earlier, the contribution of the household warrants consideration.

One human capital hypothesis from household production theory is that economic development historically was triggered by increases in the relative 'price of children'. This encouraged substitution by the family towards 'child quality', greater investment in human capital (Becker, 1993).[1] In the pre-industrial context, such a shift in household demand would also require a re-allocation of household time so as to increase household production of education and training broadly defined. More human capital accumulation then boosted economic growth.

This paper contends instead that the evidence for later nineteenth century Europe at least — and probably for Western Europe from the fifteenth and sixteenth centuries — is that lower mortality required lower birth rates. These were achieved in part by later marriage. Later marriage raised the level of female education in a general sense, by providing time not entirely committed to child rearing. The lower time cost and general price of investing in 'child quality' of better informed mothers, stimulated sustained investment in human capital, which in turn eventually raised outputs and incomes.

Section 1 summarises the elements of the pertinent household production theory, pointing out the critical role of mortality to the 'price of children' and to the 'price of child quality'. Section 2 discusses measurement and data issues. Sections 3, 4 and 5 consider in turn empirical estimates of the three fundamental equations of the proposed explanation — birth rate, age at marriage and 'child quality'. Section 3 demonstrates that later nineteenth century European and English county-level fertility depended closely on death rates. Section 4 shows that at the beginning of the twentieth century age at marriage and proportion of women married in their twenties across European economies and English counties were highly correlated with fertility. Section 5 shows that lower human capital was strongly associated with earlier higher percentages of women married or female age at marriage, even when schooling is controlled. Section 6 estimates an aggregate production function from a European cross-country panel and shows that human capital, as measured by literacy, was a substantial contributor to incomes in the later nineteenth and early twentieth centuries.

1.1. Economic–demographic equilibrium and investment in human capital

The Western European marriage pattern (WEMP), which emerged by the 16th century and persisted until at least the First World War, exhibited three principal features; an unusually late age of first marriage for females (around 25), a low rate of illegitimate births (two percent or less) and a high proportion of females never marrying (more than 10%) (Hajnal, 1965). Marriage typically was associated with establishing a separate household — the formation of a new nuclear family.

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[1] 'Even a modest tax on births can have a large negative effect on the number of children and a large positive effect on the amount spent on each child ' (Becker, 1993 p22). Becker et al. (1990) present another model that explains an inverse relationship between family size and human capital arising from increasing returns to human capital. The static formulation of the present paper does not require this increasing returns assumption.