The Long Road to Health and Prosperity, Southern Sweden, 1765–2015. Research Contributions From the Scanian Economic-Demographic Database (SEDD)

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The Long Road to Health and Prosperity, Southern Sweden, 1765–2015

Research Contributions From the Scanian Economic-Demographic Database (SEDD)

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ABSTRACT

The Scanian Economic-Demographic Database (SEDD) at the Centre for Economic Demography (CED), Lund University was built to answer questions derived from previous research using macro data from 1749 onwards. It includes longitudinal micro data for a regional sample of rural, semi-urban, and urban parishes in southern Sweden from 1646 to 1968 for approximately 175,000 individuals. In addition to the data on births, deaths, marriages, and occupations, it includes data on migration, household size, landholdings, taxation, and heights from the 1800s onwards and on income from 1865 onwards. After being linked from 1968 to 2015 to a range of national registers with detailed demographic and socioeconomic information, it includes 825,000 individuals. The richness and wide range of micro data have allowed researchers to follow individuals throughout their lives and across generations, covering extensive periods, and to make comparisons with results from macro data. This research has partly confirmed the established view on long-term changes in living standards and demographics in Sweden but has also brought into question some previously held truths.

Keywords: Sweden, Demographic transition, Family reconstitution, Population registers, Longitudinal data, Life courses, Health, Living standards

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1 INTRODUCTION

The Scanian Economic-Demographic Database (SEDD) was initially compiled to answer the questions that stemmed from previous research using tabular data from 1749, the year when population censuses started in Sweden, and onwards. These analyses covered either the entire country, counties, or smaller units. Since the population tables cannot be used to answer questions about the roles of income and wealth, social position, and household composition for demographic outcomes, SEDD was used instead. Today SEDD includes data for a regional sample of rural, semi-urban, and urban parishes in southern Sweden from 1646 to 1968 for approximately 175,000 individuals. From 1968 to 2015, SEDD has been linked to a range of national registers with detailed demographic and socioeconomic information on all individuals who have ever lived in the area and their partners, children and grandchildren. The linked micro database includes 825,000 individuals. As SEDD has continuously expanded over the past 30 years in terms of the geographical area and time period covered, not all studies are based on exactly the same sample. A detailed description of the sample, the sources and the data structure is presented in Dribe and Quaranta (2020). The income data is presented in Helgertz, Bengtsson and Dribe (2020). The fact that Sweden started much earlier than other countries making population censuses allows us to make comparisons with national development during the preindustrial era.

Although SEDD is not a representative sample of Sweden, demographic development in the area is similar to that nationally. For example, trends in both life expectancy and fertility are similar in the study area and in Sweden as a whole (Bengtsson & Dribe, 1997; Lazuka, 2017). The mortality response to short-term economic stress is also similar to the national pattern both overall and by age and sex (Bengtsson, 2004b; Bengtsson & Dribe, 2005; Bengtsson & Ohlsson, 1994). The same is true for the fertility response to short-term economic stress (Bengtsson, 2000; Bengtsson & Dribe, 2006).

The changes in the population totals for Scania were also similar to those for the entire country and of several other European countries for which pre-census estimations have been made. In fact, the estimations of the changes in the population totals for Scania show similarities to England back to 1650 (Bengtsson & Oeppen, 1993). While population development was similar to that of other European countries, economic development differed considerably. Sweden had its industrial take-off with increasing real wages in the 1870s, about a century later than England (Bengtsson & Jörberg, 1975; Crafts & Mills, 2020; Wrigley, 2011).

Although real wages in Sweden showed no clear trend before the industrial take-off, they were not stable annually. On the contrary, real wages varied greatly by year. This variation in real wages, stemming from changes in food prices, had a strong short-term impact on the fertility and mortality rates and a slightly weaker impact on the nuptiality rates. The mortality impact decreased during the 19th century (Bengtsson & Ohlsson, 1978, 1984). In this respect, Swedish development was similar to that of England (Lee, 1981), with the difference that it took place later in Sweden, just as industrialisation did. However, the variation in real wages and food prices did not affect the mortality rate at all ages. Paradoxically, while the children and adults, both male and female, suffered heavily, the elderly people were less affected, and the infants were not affected at all (Bengtsson & Ohlsson, 1985). Thus, our research based on the aggregated national data confirmed the Malthusian view that in the 18th century, many people lived close to the subsistence level (Heckscher, 1949; Malthus, 1803; Wargentin, 1772/1976). More interestingly, the findings showed, contrary to what Malthus anticipated, that in the beginning of the 19th century, the mortality response to food prices became weaker despite rapid population growth. This phenomenon meant that at least some groups escaped hunger and premature death, to use Fogel's phrase (Fogel, 1996). A recent study using parish data for southern Sweden supports this conclusion (Dribe, Olsson, & Svensson, 2017).

According to the traditional view, the demographic transition in Sweden started in approximately 1800 with a decline in the crude death rate due to modernization and continued with a decline in the crude birth rate in the 1880s (e.g., Notestein, 1953). The problem is that there was not much modernisation in 1800, apart from improvements in agriculture. Real wages did not start to increase until the 1870s (see Bengtsson & Ohlsson, 1994). This means that there was a mismatch in the timing between the mortality rate decline and modernisation (e.g. industrialisation). In fact, the mortality rate started to decline well before 1800 due to a reduction in smallpox mortality rates among children, making the gap even wider (Bengtsson, 2001). This implies that the first stage of the mortality decline in Sweden, the reduction of the infant and child mortality rates, was part of an older pattern in which the level of mortality varied independently of modernisation, as in England (Wrigley & Schofield, 1981). Only after

1870, when the adult mortality rate also declined, there was a direct association between economic development and the mortality rate, and at approximately the same time, the fertility rate started to decline. For this reason, Bengtsson and Ohlsson (1994) argued that the demographic transition in Sweden did not start with the mortality decline in 1800, but in the 1870s, with modernisation, a continued decline occurred in the mortality rate at all ages, and the fertility rate began to decline.

Taken together, the results from aggregated studies on the mortality and fertility rates, and real wages, confirm the Malthusian view of the poor conditions in the 18th century, but not his predictions that conditions got even worse when population grew rapidly, and question the theory of the demographic transition. To understand the changes in the living conditions that occurred when Sweden transformed from an agricultural to an industrial society, it is necessary to go beyond aggregated statistics. As a first step, more knowledge is needed about how different social and economic groups were affected by this transformation. For this reason, Tommy Bengtsson and Rolf Ohlsson, in 1983, started a collaboration with the Regional Archives in Lund with the aim of developing a database linking births, deaths, and marriages from church books with information on occupations for a sample of nine parishes and a town in western Scania, which later became the SEDD. Bengtsson collaborated with statistician Göran Broström on how to integrate the analyses of aggregated data on real wages and food prices with the individual-level demographic data to connect to our previous research (see, e.g., Bengtsson, 1997a, 1999; Bengtsson & Broström, 2010).

With the start of the comparative *EurAsian Project on Population and Family History* in 1993, SEDD was expanded with household information from catechetical examination records as well as from income and other records for five of the original nine parishes and, recently, for the port town of Landskrona. The data date back to 1646 for two parishes, 1686 for three parishes, and, presently, 1905 for Landskrona (see Dribe & Quaranta, 2020). Using the linked data, the area population can be followed without gaps from about 1815 to 2015, with information on demographic, economic, and social conditions. Data on migration are also available from approximately 1815, which means that information on exposure is available for or the entire population from this year. Most importantly, the demographic development in this area — including the changes in total population, life expectancy, and family size — follows the same time trends as the entire country (Bengtsson & Dribe, 1997; Lazuka, 2017; Quaranta, 2013).

Below, we overview the findings from the research based on the SEDD. The richness and wide range of the data allow us to conduct research covering extensive periods and many topics, following individuals along their life courses and across generations. We start with an overview of the economic development and social structure of the area and continue with topics related to the demographic transition. We summarise the research on how conditions in early life influenced health and well-being later in life, the delayed effects of conditions in early life. We start each section by giving a brief overview of the context and previous research at the national and regional levels to compare with the findings using the SEDD microdata where they overlap.

2 ECONOMIC DEVELOPMENT AND SOCIAL STRUCTURE

During the 19th century, the transformation from an agricultural to an industrial economy — together with the demographic transition, urbanisation, and large-scale emigration — fundamentally changed the living conditions for the Swedish population. The public poor-law system lagged behind, as it did in other countries at the time (Bengtsson, 2004b; Skoglund, 1992). It provided help only to disabled and elderly people, and since the manorial lords assisted only their own employees, most people had to rely on their families if they could not provide for themselves (Dribe, Olsson, & Svensson, 2010; Lundh & Olsson, 2002, 2009). As a result, in bad years, theft and crime increased (Hellstenius, 1871), and hordes of people left their homes to find work elsewhere (Utterström, 1957). Some went to towns, while others went to nearby villages (Bengtsson, 1987, 1990; Bengtsson & Dribe, 1997).

The first step to develop the welfare state was taken when a pension system was introduced in 1913. Social welfare expanded in the 1930s, and in 1948 pensions covered the costs-of-living for the first time, but it was not until the 1960s and thereafter that the welfare systems became more extensive (Elmér, 1971). Meanwhile, school participation rose. The percentage of all 16-year-olds who had

completed at least nine years of schooling increased from approximately 4% in 1930 to approximately 26% in 1965 (Stanfors, 2007), and since the 1960s, university education has expanded rapidly.

Scania is known as the granary of Sweden. When Sweden acquired the province from Denmark in 1658, the noble class owned 54% of the land, the crown owned 29%, the church owned 11%, and the freeholders owned 8% (Weibull, 1923). As tenants bought land from the crown in the 18th century at favourable prices, their share of the land increased steeply. For example, in Hög and Kävlinge, two of the five rural parishes included in the SEDD, the freeholders owned 10% of the land in 1730, 50% in 1800, and 95% in 1870 (Svensson, 2013). This shift occurred as agricultural reforms were being made. In the five rural parishes, enclosure reforms took place between 1764 and 1849, except on one of the estates, where it did not happen until 1914 (Bengtsson & Dribe, 1997). Together with land reclamation, new crops, new technology, labour reorganisation, and access to foreign markets, production increased in both absolute terms and per capita (Olsson & Svensson, 2010). In parallel, the number of farm workers increased, and by the beginning of the 19th century, more than half of the population was landless (Bengtsson, 2004b; Bengtsson & Dribe, 1997).

As the accumulation of land and the division of farms occurred in parallel, the structure of the farmer class changed. The farmers became a heterogeneous group in terms of farm size. While some farmers hired labourers to work for them, others were themselves part-time labourers (Bengtsson & Dribe, 1997). Household size, likewise, varied greatly depending on land size (Dribe, 2000; Lundh, 1995).

When the railroad network expanded in the 1860s, one of the rural parishes, Kävlinge, became a hub and changed into a small industrial town characterised by the food and textile industries. The other four parishes — Hög, Halmstad, Sireköpinge and Kågeröd — remained largely rural. Landskrona, a port town involved in the grain trade, became an important place for shipbuilding and other industrial activities (Dribe & Svensson, 2019).

Preindustrial rural societies have often been characterised as stationary and immobile, both geographically and socially. Several studies using the SEDD have proven this view wrong. Instead, social mobility in the five parishes was high (Dribe & Svensson, 2008a). Downwards mobility, e.g., from the peasant class to the semi-landless and landless groups, was more frequent than upward mobility and increased over the 19th century (see also Lundh, 1999a). Social attainment was determined by both inheritance and individual agency. Social and spousal origins were of crucial importance for socioeconomic attainment in this largely rural context (Dribe & Lundh, 2009a). Both social homogamy and geographic endogamy play important roles in socioeconomic reproduction (Dribe & Lundh, 2010).

Before 1900, access to land was the main basis of someone's social position in the countryside. Families adopted strategies to secure the transmission of land from one generation to the next, despite a rather equal inheritance legislation under which all sons and daughters inherited equal shares from 1857 onwards, and where previously sons had inherited twice the amount that daughters did. The families in the rural areas between 1720 and 1840 often used formal retirement contracts to circumvent the inheritance legislation to pass on the landholding to one of the children (Dribe & Lundh, 2005a). Based on the post-mortem inventories, Dribe and Lundh (2005a) found that, while sons were more likely to take over, daughters (rather, sons-in-law) often took over as well, and not only in cases where no sons were available. This practice indicates the flexible strategies used in the intergenerational transmission of land, the most important productive resource in this context. Land transmission was crucial for securing reproduction, as it gave the new generation access to marriage and childbearing. Retirement contracts were also important among manorial tenants, who did not own their land. However, the conditions were usually not as beneficial as they were among freeholders, and the noble landowners sometimes intervened in the intergenerational transmission of the tenancies (Lundh & Olsson, 2002).

As the land market developed in a capitalist direction during the 19th century, these land transmission strategies changed even though retirement remained an important strategic aspect (Dribe & Lundh, 2005b). Earlier, land transmission was largely an intra-family affair, in which the value of the property was kept low to facilitate transmission to one chosen heir. In the first half of the 19th century, it was increasingly channelled through the market as the real value of the property became clear to all heirs.

When looking at the 20th century, land becomes insufficient to assess socioeconomic status and must be complemented by other aspects. Occupation-based social class offers a broader view of social stratification, and in a number of studies, such class schemes have been used to study both socioeconomic mobility and socioeconomic differentials in demographic outcomes such as marriage

and the fertility and mortality rates. Two different, but in many ways quite similar, class schemes have been employed in different studies: SOCPO (Van de Putte & Miles, 2005; Van de Putte & Svensson, 2010) and HISCLASS (van Leeuwen & Maas, 2011). They are both based on the occupations coded in HISCO (van Leeuwen, Maas, & Miles, 2002). The recent SEDD releases include the occupational notations coded in HISCO and coding schemes to derive HISCLASS (see Dribe & Quaranta, 2020).

The data for the five parishes for 1815–1968 have been used to analyse the long-term development of social mobility based on the SOCPO classification (Dribe, Helgertz, & Van de Putte, 2015). The analysis was related to the extensive scholarship in sociology, which had debated whether social mobility increased from preindustrial to industrial times and the extent to which social mobility differed across industrial societies depending on the level of development (e.g., Erikson & Goldthorpe, 1992; Featherman, Jones, & Hauser, 1975; Grusky & Hauser, 1984; Lipset & Zetterberg, 1956). Both absolute (total) and relative (societal openness) mobility increased over time, mainly as a result of the increasing upward mobility in the 20th century, as educational expansion promoted the entry of people from working-class origins to the expanding middle class of white-collar workers.

Expanding the analysis of social mobility to three generations in the five parishes between 1815 and 2011, based on HISCLASS, Dribe and Helgertz (2016) demonstrated a clear association between the grandfathers' and the grandsons' classes, net of the class of the fathers. They also analysed the intergenerational associations in occupational status using the HISCAM scale (Lambert, Zijdeman, van Leeuwen, Maas, & Prandy, 2013) and earnings. While the HISCAM associations were similar to those found in HISCLASS, they found no association between the earnings of grandfathers and grandsons net of the earnings of the father. The literature includes a debate about how to interpret these kinds of 'grandfather effects': whether they represent a real influence from grandfathers to grandsons or whether they result from measurement errors or random shocks to attainment in the father generation.

A recent study of higher education attainment used the data for the five parishes and Landskrona for 1939–2015 to study the role of the socioeconomic composition of the neighbourhood (Hedefalk & Dribe, 2020). For this study, the individual-level data were geocoded at the address level and used to create a flexible measure of the socioeconomic status of the neighbours. The results showed that the neighbourhood social class in childhood was associated with attaining a higher education regardless of the social origin and the school the children attended.

To summarise, research using the SEDD has demonstrated that there was considerable social mobility in preindustrial society, especially downwards from the farmer class to landless or semi-landless labourers. As the area industrialised, social mobility increased, and later in the industrialisation process, upward mobility increased, connected to the increasing importance of education and merit-based recruitment in the labour market.

3 MIGRATION

Preindustrial society has often been viewed as geographically immobile. Especially within modernisation theory, which became popular in the social sciences in the post-WWII period, rural society has often been pictured as stationary and the people who lived there as unwilling to move. Only with industrialisation and the connection of local markets to wider regional, national and later international markets did conditions develop for migration (see, e.g., Hochstadt, 1999). In a number of studies using the SEDD, this picture of an immobile preindustrial society has been refuted. Geographical mobility was high in preindustrial society. In fact, people moved almost as frequently in the 19th century as they do today (Dribe, 2003a).

In the SEDD area, during the first half of the 19th century, only 30% of the population over age 25 were born in the same parish as the one in which they resided (Dribe, 2000). On the other hand, migration was local, and almost 80% lived within 15 kilometres from their place of birth. Overall, migration occurred primarily within a 15-kilometre range: 87% for children leaving home, 86% for family migration and 78% for servants (Dribe, 2003b). Most migrants were young adults, and servants especially were mobile, often moving every year. The high mobility of servants was related not only to work organisation and occupational mobility but also to marriage, dissatisfaction with employers, or economic fluctuations affecting the demand for labour (Dribe & Lundh, 2005c; Lundh, 1999b).

Additionally, families moved quite frequently (Dribe, 2003b), especially those belonging to the group of landless labourers (Dribe & Svensson, 2008b).

Areas with rapid agricultural development in the first half of the 19th century and, later, areas with industrialisation offered higher wages to attract labour, which led to an increase in longer range, rural-to-urban migration (Bengtsson, 1990). As people migrated to these areas to meet the demand for labour, the wage differentials eventually levelled off and migration declined.

Migration could also be a way to mitigate the impact of short-term economic stress caused by local harvest failures or external changes in food prices (Allen, Bengtsson, & Dribe, 2005; Bengtsson, 2004a). Although one could expect people to leave when conditions were bad, research based on SEDD has shown that migration was a quite inefficient relief in times of economic stress, especially for those most in need (Bengtsson, 1987; Dribe, 2000, 2003c). The landed groups economised on labour, adjusting the timing of their sons' leaving home to economic conditions (Dribe 2000, 2004a). In years with low prices, when they obtained lower revenues selling their products, they kept their children at home as a substitute for servants, which minimised their labour costs. This fact means that the migration of children from the parental home was an important part of the strategic actions of the peasant families in balancing the demand and supply of the household labour (Dribe, 2000; Dribe & Lundh, 2005c).

Regardless of food prices, a large majority of the children of landless and semi-landless labourers left home around age 15, when their family, or employer, had to start paying taxes for them. Even though these families suffered from high food prices, they were unable to cope with their difficulties by letting their children move away from the household. Instead, the landed group adjusted their family sizes and compositions in years of economic stress (Dribe, 2000, 2003c, 2004a). Patterns of leaving home were also strongly affected by demographic stress in the household, stemming from the death of one of the parents. Such events were largely disruptive and had similar effects on sons and daughters, with the exception of older daughters with younger siblings, who tended to remain at home longer after the deaths of their mothers (Dribe, 2000).

A number of studies using the SEDD have shown that preindustrial society was not as immobile as has previously been argued. In fact, people moved almost as frequently in the 19th century as they do today. Migration, temporary and permanent, has been seen as a way of reducing the stress caused by variations in harvests and food prices. The landed families were better able than the landless families to take advantage of this instrument. The farmers could economise with the labour of their children, since in bad years, the children could stay at home to work on the farm. Thus, migration was not the universal solution to short-term economic stress, as has previously been thought.

4 MARRIAGE

The household was of the utmost importance in preindustrial times. Living alone was not an option. The division of labour within the household secured a couple's well-being in different ways. Following Peter Laslett's research on the predominance of nuclear-family households in preindustrial England, in the 1970s and 1980s, interest surged in historical family patterns (e.g., Berkner, 1972; Hammel & Laslett, 1974; Laslett, 1965/1994; Laslett & Wall, 1972). Studies using early SEDD data have shown that household size and composition differed by social group (Dribe, 2000; Lundh, 1995). A trend was found towards smaller households from the mid-18th to the mid-19th century, partly because of proletarianisation, through which the social groups with the smallest households increased their proportion of all households. The size and structure of the households, especially the peasant households, also changed over the family life cycle, and servants were used as substitutes in times when the supply of family labour was low (Dribe, 2000; Lundh, 1995).

In Sweden, as in the rest of Western Europe, a new independent household was formed when a couple married (Hajnal, 1983; see also Lundh & Kurosu, 2014). In this way, marriage was an important life-course transition between the leaving of the parental home and the birth of the first child, and the incidence of bridal pregnancy was high in many contexts, including Scania (Dribe, Manfredini, & Oris, 2014). In the life-course trajectory, socioeconomic status differed considerably, both with regard to the age at leaving home and the age at marriage.

Sweden had a Western European marriage pattern, characterised by late marriages and high population proportions never marrying (Hajnal, 1965). In 1900, 14% of the men and 19% of the women aged 45 to 49 had never been married (Dribe & Lundh, 2014). Regional variations were considerable in the marriage patterns in Sweden (Lundh, 1993, 1999c, 2013). Marriage patterns between the socioeconomic groups were distinctly different for the men but not for the women. At age 45, 6% of the landed men and 25% of the landless men were unmarried in the 19th century (Dribe & Lundh, 2014). Marriage occurred late, for both the men and the women. The landed males married on average at age 27, and the landless men did so at age 28. The women married on average at age 25 regardless of socioeconomic status.

Important were both when to marry and to whom. Choosing the right spouse was crucial, especially for the landholding population, and marriage was largely a strategic alliance to secure the social reproduction of the landholding class. Scania, as were most other preindustrial rural areas of the time, was characterised by a strong social homogamy, especially among the landowners. They were much more likely to marry a spouse from the same social origin than were those of landless or semi-landless origins. This strong pattern of social homogamy did not change much over the 19th century (Dribe & Lundh, 2005d). Age homogamy and geographic endogamy were also strong but not as strong as social homogamy, and geographic endogamy became especially less prevalent over the 19th century (Dribe & Lundh, 2009b).

Moreover, the timing of marriage during the year was important in an agricultural society in which the labour demand varied strongly by season. Getting married during the peak harvest season was impossible, as most people would have been fully occupied with farm work during that time. By looking at the changes in marriage seasonality in Scania between 1685 and 1895, Dribe and Van de Putte (2012) traced an increase in the work intensity over the year, consistent with the idea of an 'industrious revolution' (de Vries, 1994). The seasonality of marriage changed dramatically over time, as marriages became increasingly concentrated in the remaining slack season in December, especially around Christmas.

The death of a spouse brought profound changes to the living conditions of the surviving party. This phenomenon caused remarriages to be an integral part of the marriage system (Lundh, 2002, 2007; Kurosu, Lundh, & Breschi, 2014). The consequences of the decline in support could be disastrous, though various kinds of compensation were available, such as inheritance, gifts and charity (economic support), hired domestic servants (service support), and children and other relatives or neighbours and friends (social and emotional support).

Access to such compensatory measures in a peasant society depended on factors such as gender, household structure, and socioeconomic status. Widows, especially if they were landless, were more dependent on economic assistance to offset the loss of a deceased husband's income. Widowers were more in need of extra service support to replace the domestic work of a dead wife (Nystedt, 2002). The presence of children in the household was a potential source of all types of support (Dribe, Lundh, & Nystedt, 2007). The men were more likely to remarry than the women were, and the young people were more likely to do so than the old people were. Remarriages also became less common over time, and, while the likelihood of remarriage among men exhibited no socioeconomic difference, such a difference was found among the women. A peasant widow was approximately 50% more likely to remarry than a non-peasant widow was.

Changes in the food prices seem to have had no effect on the propensity to remarry among the farmers, although they had a clear *negative* effect on the non-farmers in the 19th century (Lundh, 2007). Apparently, the farmers had alternatives to remarriage, such as employing servants, to keep the households intact. This situation was the opposite of that pertaining to first marriages, where there were no effects of economic fluctuations among the landless groups, only among the landed groups (Bengtsson, 2014). After years of high food prices, the landed groups delayed the marriage of their children, just as they delayed their leaving home (Dribe, 2000). Thus, marriages and remarriages worked in different ways for the landed and landless groups.

These findings confirm that southern Sweden was part of the Western European family pattern regarding the dominance of nuclear families, a high age at marriage and large proportions of the population not marrying. This pattern was the opposite of the Eastern European family pattern, in which stem-family households dominated and marriage was early and universal among the women.

However, the findings question the saving model put forward by Wrigley and Schofield (1981) as the main reason for the difference in living standards between the East and the West. Research based on the SEDD does not support the idea that during bad times saving enough money to marry and set up a new household took longer, thereby slowing the population growth and promoting living standards. For some people, marriage became possible simply by finding a place where both the man and the woman could work. For those buying a farm, not only their own but also parental savings were important, which is why a two-generation model considering parental wealth is necessary to understand the timing of marriages (Bengtsson, 2014).

5 FERTILITY

The theory of the demographic transition stated that modernisation first caused a decline in the mortality rate and, after a delay, a decline in the fertility rate, partly due to a decline in the infant and child mortality rates and partly due to modernisation (Notestein, 1953). After obtaining the number of surviving children they wanted, parents tried to avoid further births using some form of contraception. This situation meant that the decline in the fertility rate mainly should have occurred among women in their late thirties. However, this stopping behaviour is not completely true for Sweden, where the fertility rate declined at all ages above 25, but the older age groups showed a larger decline early in the transition than the younger age groups did (Bengtsson & Ohlsson, 1994; Dribe, 2009). The decline in the fertility rate is of such a magnitude that it rules out the decline in the infant and child mortality rates as a main factor. Moreover, the timing rules out the infant mortality rate as the main explanation since it had already started to decline in the mid-18th century (Bengtsson & Ohlsson, 1994). This finding is consistent with previous research showing that stopping behaviour was only part of the story and that later starting and delaying childbearing were also important, regardless of whether these behaviours were due to an adjustment to the new economic conditions or they were an effect of an innovation process (Carlsson, 1966).

A study using the SEDD found large differences in the start of the fertility decline between different socioeconomic groups, where the elite groups were forerunners, and the unskilled workers, laggards (Bengtsson & Dribe, 2014). The study showed that the fertility transition involved not only parity-specific stopping but also prolonged birth intervals. This finding meant that even newly married couples controlled their fertility, which is consistent with the findings for the entire country (Bengtsson & Ohlsson, 1994). It also showed that the interval between the marriage and the first birth was initially shorter for the lower socioeconomic strata, implying that the marriage and first birth decisions were interlinked in this group. This finding has also been made for other populations and implies that first births need to be analysed separately from second and higher order births. Finally, turning to second and higher order births, the study demonstrated that the elite group and the middle class were the first to start to limit their fertility, followed by the skilled workers and farmers and finally the unskilled workers. Thus, while the fertility rates initially diverged by socioeconomic status, they converged by the 1930s. Overall, a similar pattern has been found for other European and North American populations (Dribe et al., 2017), for Sweden as a whole based on census data (Dribe & Scalone, 2014), and for Stockholm in the same period (Dribe & Molitoris, 2016).

The socioeconomic pattern of the fertility transition in rural Scania does not appear completely consistent with several of the major explanations, such as the infant mortality decline, increased female labour-force participation, and a quantity-quality trade-off. Instead, it is consistent with an innovation process in which new ideas and attitudes about family limitation spread from the elite to other social groups. Whether this explanation for the observed pattern holds true is difficult to ascertain. High benefits of having children and comparatively low costs could also help to explain the lag in the decline among the farmers and labourers, but the early decline of the elite group seems difficult to reconcile with this explanation.

The relationship between social class and fertility in Scania (Landskrona and the five parishes) changed over the 20th century (Dribe & Smith, 2020). Pronounced changes occurred in the associations between social class and fertility over time, which during some periods, depended on parity. A higher position was associated with high fertility for the men and lower fertility for women before 1970, which then converged to a positive association for both sexes after 1990. Over the same timeframe, the

weakly U-shaped relationship between social class and continued childbearing turned into a positive association for second births and a largely negative association for higher order births.

Prior to the fertility transition, the married women in the five rural parishes gave birth to an average of seven children, slightly less than Sweden as a whole (Bengtsson & Dribe, 2010a). The question is whether this finding means that families did not plan their births before the fertility decline. Did the women avoid pregnancies in years of hardship? A clear fertility response to short-term economic stress has been found in studies for Sweden and other countries using aggregated data (Bengtsson & Ohlsson, 1978; Galloway, 1988). The crude birth rate in Sweden followed real wages for the agricultural workers very closely until the late 19th century. In fact, the two series are almost impossible to distinguish (Bengtsson, 2000). A closer look at the lag structure by an analysis of the monthly data revealed that the fertility response began a few months after the harvest and reached its maximum 15 to 17 months afterwards, independent of the marriage rate (Bengtsson & Ohlsson, 1988).

We would expect different socioeconomic groups to respond differently to economic stress for many reasons. While the landed groups had shorter birth intervals than the landless groups did, food prices primarily affected the latter (Bengtsson & Dribe, 2006, 2010a, 2010b; Dribe, 2000). Similar to the results of the analyses using the aggregated data, the response came after a few months and persisted for more than a year. The fact that it came so early indicates that fertility was deliberately controlled since miscarriages typically occurred in the beginning of pregnancy, giving delayed effects on births. The fact that bad harvests could be anticipated also supports this conclusion (Bengtsson & Dribe, 2006). The delayed response, however, might also have been a by-product of miscarriages and sub-fecundity due to acute malnutrition. As real wages increased among the landless groups in the latter part of the 19th century and consumption stabilised, food prices no longer had an impact on the fertility rates (Bengtsson & Dribe, 2005).

Taken together, the studies using the SEDD have shown that deliberate fertility control occurred among the workers prior to the fertility transition, not primarily to limit family size but to alleviate stress and maintain consumption. These studies have also shown that the fertility transition was about not only stopping but also spacing. It started with the upper classes in the 1880s, was followed by the middle classes and farmers, and was concluded by the workers in the 1930s. Finally, no link was found between declining infant and child mortality and fertility, most importantly, since the time gap between the two was very long but also because the fertility decline was much larger than the decline in the infant and child mortality. Hence, these findings question the previous understanding of the fertility transition and the absence of family planning prior to it, showing that many families controlled births to cope with their present economic situations.

6 MORTALITY

In Sweden, the mortality rate among infants started to decline in the 18th century, similar to the United States and England (Fogel, 1996; Fridlizius, 1984; Wrigley, Davies, Oeppen, & Schofield, 1997). Based on aggregate statistical tables for Sweden, which have information on causes of death, it can be concluded that the early decline was entirely due to a reduction in smallpox mortality (Bengtsson, 2001). It was followed in the beginning of the 19th century by a decline in child mortality independent of social and economic structures (Fridlizius, 1984). Then, starting in the mid-19th century, a decline occurred in adult mortality, which was faster among the women than the men (Bengtsson & Ohlsson, 1994). Changes in the causes of death over the long term followed the epidemiological transition, from a predominance of acute infectious diseases, e.g., epidemics, to chronic and human-caused diseases (Omran, 1971).

Identifying the role of social and economic factors in the mortality rate decline using the SEDD annual data is, however, not an easy task. The main reason is the small number of deaths when considering not only occupation but also age and sex. Instead, most studies using the SEDD have analysed the mortality levels and the response to short-term economic stress for subperiods for the different socioeconomic groups.

Starting with socioeconomic differences in adult mortality rates, the SEDD-based research, including the data for Landskrona from 1905, has shown that, contrary to the established view, the mortality

gradient is quite a recent phenomenon (Bengtsson, Dribe, & Helgertz, 2020; Debiasi, 2020), consistent with our previous findings for the rural and semi-urban parishes (Bengtsson & Dribe, 2011; Bengtsson & van Poppel, 2011). A full mortality gradient in working ages by social class and income emerged only after 1950 for women and after 1970 for men and even later for the elderly people. The estimated differentials for the period after 1990 were very close to those for the entire country (Torssander & Erikson, 2010), as were the results for the beginning of the 20th century (Dribe & Eriksson, 2018). Thus, in 1920–1950, for which the SEDD includes data for both the countryside and the town, adult mortality for men exhibited no socioeconomic differences but possibly some for women. This finding holds also when examining occupations in detail. The men with more prestigious jobs — such as architect, engineer, physician, and lawyer — did not have lower mortality rates than those in other occupations until the second half of the 20th century (Debiasi, 2020).

Advantages related to higher social class, or higher income, appeared at approximately the same time for different disease groups, regardless of preventability, which indicates that the emergence of the gradient was not dependent on medical treatment. An exception was that, already in 1920–1950, a higher income for men was associated with lower mortality from infectious diseases. Another outstanding result was that, during the 19th and first half of the 20th century, the mortality from circulatory diseases for the men had a reversed social gradient (Debiasi & Dribe, 2020).

In the rural area (the five parishes) in 1813–1864, the unskilled adult men and women had a higher mortality than the low-skilled workers did. For men, higher classes had higher mortality than the low-skilled workers did (Bengtsson & Dribe, 2011; Bengtsson, Dribe, & Helgertz, 2020), which created a U-shaped relationship between social class and mortality for men. Similar findings have been made for other areas in Sweden (Edvinsson & Broström, 2012; Edvinsson & Lindkvist, 2011) in the 19th century and for Sweden as a whole in the early 20th century (Dribe & Eriksson, 2018). Apparently, adult mortality differed between the socioeconomic groups prior to the emergence of a complete mortality gradient, whether due to exposure, lifestyles, or other factors. These differences were, however, not systematic, did not form a gradient, and were not always even in an expected direction given the access to resources.

There was no clear pattern of class differentials in the childhood mortality in the first half of the 19th century, a period when both infant and child mortality declined rapidly (Dribe & Karlsson, 2021; Johansson, 2004). However, there were certain differences between areas depending on soil type, which could be viewed as a proxy for agricultural productivity (Hedefalk, 2016; Hedefalk, Quaranta, & Bengtsson, 2017). In the second half of the 19th century, class differences started to emerge. This was the case for both the post-neonatal infant mortality rate and the child mortality rate. Over time, an essentially full gradient was established for post-neonatal mortality, and a weak gradient emerged for child mortality. However, the most striking pattern was the disadvantaged position for the lowest class of the unskilled workers, a disadvantage that remained throughout the 1960s, also at a time when the mortality levels were very low, and the living standards had increased dramatically for all classes in the population (Dribe & Karlsson, 2021).

Before the second half of the 19th century, knowledge was limited on how common infectious diseases were transmitted, except for epidemic diseases such as smallpox and whooping cough. This fact made it difficult even for the upper classes and the best educated to protect their children, and themselves, from disease. When the transmitting agents became known, and the means were available, the lower classes did not lag far behind in their use. This was, for example, the case for smallpox vaccination, which became compulsory in 1816 (Dribe & Nystedt, 2003). This was also the case for infectious diseases in the latter part of the 19th century. When their mode of infection and preventive measures became known, for example, the use of antiseptics and isolation hospitals, all social groups benefitted from it at approximately the same time (Lazuka, 2017, 2018; Lazuka, Quaranta, & Bengtsson, 2016). Similarly, improvements in water and sanitation were explicitly targeted towards the entire population, not to specific social groups (Helgertz & Önnerfors, 2019).

Analyses of the national data at the aggregated level show that fluctuations in real wages had strong impacts on the child and adult mortality rates until the mid-19th century, which implies that at least part of the population lived close to the margins (Bengtsson & Ohlsson, 1985). Nevertheless, the levels of child and adult mortality in this period exhibited no gradient. Does this finding mean that the entire population suffered from increasing mortality as food prices increased, which seems very odd given the inequality in access to land?

The results using the SEDD have shown that, in the beginning of the 19th century, after the agricultural reforms, families with different access to land were affected differently by economic stress (Bengtsson, 2004b; Bengtsson & Dribe, 2000). The working classes suffered from high food prices to such an extent that family members died (Bengtsson, 2000, 2002, 2004b). Their infants were barely affected, possibly due to breastfeeding, nor were the elderly people. Instead, it was adults and children of both sexes that died from high food prices (Bengtsson, 2004b). Before then, in the latter part of the 18th century, all social groups suffered from short-term economic stress. This was a period when epidemics, such as smallpox, whooping cough, and typhoid fever, caused many deaths. The similar mortality experience of rich and poor individuals in this period might have been, at least partly, a result of the spread of such diseases due to temporary migration in years of poor harvests rather than malnutrition. Later on, in the latter part of the 19th century, as agricultural transformation and industrialisation raised real wages for the workers, the workers no longer died in years of economic stress (Bengtsson & Dribe, 2005).

Determining causality empirically is important but difficult. It involves two different, but related, problems with regard to the mortality response to short-term economic stress. The first is the extent to which the impact of food prices on the mortality rate is biased when selecting years with mortality crises, a method used in many studies. In a study using the SEDD data for 1765–1898, Bengtsson and Broström (2011) found that conducting a study that focuses only on mortality crisis years led to a large overestimation of the impact of food prices on the mortality rate. The second problem concerns the mixing of factors that directly and indirectly have an impact on mortality. Using the additive hazards model, in combination with a dynamic path analysis, they demonstrated that, while food prices had an effect on socioeconomic position in adulthood, the direct effect of food prices on old-age mortality was dominant. Their finding is consistent with the late emergence of a social gradient in adult mortality (Bengtsson & Dribe, 2011; Bengtsson, Dribe, & Helgertz, 2020).

These results present contrasting views regarding the role of diet and disease in the mortality transition. On the one hand, the impact of food prices on the mortality rate changed with the development of agriculture and industry. With the agricultural reforms in the beginning of the 19th century, the mortality rate no longer depended on food prices among the farmers, only among the workers. When real wages increased in the latter part of the 19th century, the mortality rate no longer depended on food prices for any socioeconomic group. Thus, the mortality response to fluctuations in food prices had a social gradient, which successively disappeared over the 19th century. On the other hand, there was no social gradient in the mortality level until the second half of the 19th century, when a gradient started to emerge for children. It was followed by women in working ages, then men of working ages, and finally with elderly people. This finding meant that the entire emergence of the social gradient in mortality took place over a one-hundred-year period, starting in the second part of the 19th century, following the same age pattern as the mortality decline. Taken together, these results suggest that socioeconomic status has not always been an important determinant of health and mortality, as has often been argued (e.g., Link & Phelan, 1995).

7 A LIFE-COURSE PERSPECTIVE ON HEALTH AND PROSPERITY

Studies of the mortality rate decline in England and Wales as well as Sweden using national data have shown that the children born in the first part of the 19th century who successively experienced lower mortality rates also had lower mortality rates as they aged (Crimmins & Finch, 2006; Fridlizius, 1989; Kermack, McKendrick, & KcKinley, 1934). This pattern is, however, less clear for children born at the end of the 19th century (Fridlizius, 1989). The first question is whether delayed or lasting, effects of improved health in early life are an effect of improved nutrition, reduced disease load, medical treatment in childhood, or something else. The second question is whether improved health in childhood was passed on to the next generation (Floud, Fogel, Harris, & Hong, 2011; Fogel & Costa, 1997).

Since these questions are difficult to answer using national data, efforts have been made to use regional data instead. Studies of Norway and England have shown that general living conditions at the time around a person's birth had an impact on heart disease mortality rates at older ages (Barker & Osmond, 1986; Forsdal, 1977). Later analyses have shown that such a correlation existed not only

for heart disease but also for many other diseases, e.g., respiratory and allergic diseases, diabetes, hypertension, breast and testicular cancers, and neuropsychiatric diseases (Kuh, Ben-Shlomo, & Susser, 2004; Lindström & Davey Smith, 2007/2019). While national or regional data help us to describe the time pattern, they do not help us to determine the causes, since many other factors show similar trends. For this reason, attention has been drawn to the individual-level data.

Studies based on the individual-level data for the United States and several other countries, including Sweden, show that exposure to the 1918 pandemic during the foetal stage led to health damage in later life (Almond, 2006; Helgertz & Bengtsson, 2019). Studies of malnutrition during WWII in the Netherlands show similar effects (Lumey, 1998). Studies of a single event, such as a pandemic or a war, have obvious identification problems, simply because other factors may change at the same time. To solve this problem, the SEDD has been used to analyse the long-term effects of repeated events, such as variations in food prices and disease exposure at the start of life.

Given the strong effects of food prices on female adult mortality among the landless in the first part of the 19th century, many pregnant women may have suffered from malnutrition, possibly resulting in health problems for their new-borns. The infant mortality also showed great variability, often due to the spread of non-nutrition-dependent epidemics, such as smallpox and whooping cough, creating variation in the disease load between birth cohorts. Since short-term deviations in food prices and the infant mortality rate were not correlated, we used them as independent exogenous indicators of nutrition and disease exposure in early life.

Bengtsson and Lindström (1997, 2000, 2003), analysing the rural parishes in the SEDD, 1765–1898, found that exposure to epidemics, such as smallpox and whooping cough, in the first years of life had a strong impact on health in adult life. Nutritional deprivation and socioeconomic adversity during the foetal stage or in the first year of life had no such effect. The mortality in infections and heart diseases at older ages were particularly dependent on exposure to infectious diseases in the first year of life (Bengtsson & Lindström, 2000). Effects of disease load in the first year of life have also been found for ages 25–55 (Bengtsson, 1997b). Regarding the mechanisms, Bengtsson and Lindström (2003) suggest that infections in early life hampered the development of organs and cells and caused the onset of inflammation processes that led to arterial sclerosis.

Efforts have also been made to analyse the effects of conditions at the start of life on the mortality rate in childhood and adolescence (see Johansson, 2004). Analysing the impact of food prices and the disease load in ages 1–15 for different socioeconomic groups, Johansson (2004), using the same data as Bengtsson and Lindström, finds that the effects differ over time as well as between different social groups. Claësson (2009), using the data for five rural parishes, found that in 1831, a year with a severe outbreak of whooping cough, new-borns showed higher mortality rates at ages 15–25 than the surrounding birth cohorts. Quaranta (2013, 2014), studying the mortality rates at all ages above age one in the five rural parishes from 1813 to 1968, found that selection dominated in early childhood, followed by a period up to age 25 in which the effects of selection and scarring cancelled out, after which scarring started to dominate. Analysing outbreaks of different epidemics — such as whooping cough, measles, and scarlet fever — Quaranta (2013) found that whooping cough in the first years of life was particularly harmful.

The role of exposure to infectious diseases in the first years of life may affect not only the mortality later in life but also physiological well-being more generally. At the aggregated level, harvests during the foetal stage affected the proportions being dismissed when they were later tested for the army (Hellstenius, 1871). However, using the rural parishes in the SEDD between 1818 and 1868, Öberg (2014a, 2015) did not find any early-life effects on physical status, measured by the height of males at conscription. This finding is consistent with the fact that selection and scarring tended to cancel out until approximately age 25 (Quaranta, 2013, 2014). Overall, the differences in heights between social groups were small. The men whose fathers belonged to the higher socioeconomic groups were slightly taller than average, but the sons of the farmers and farm workers had similar heights (Öberg 2014a, 2014b). For the women, the health of their new-born children has been used as an indicator of their own health, which showed that the women who were exposed to high infant mortality rates, mainly due to epidemics, more often lost their babies in the first year of life than the women who were not exposed to high infant mortality rates (Quaranta, 2013).

Infant mortality was transmitted across generations: mothers who lost two or more of their siblings in infancy had a higher likelihood of experiencing the death of their own offspring in their first year of life (Quaranta, 2018; Quaranta & Sommerseth, 2018). The same pattern was also found in northern Sweden (Broström, Edvinsson, & Engberg, 2018), Belgium (Donrovich, Puschmann, & Matthijs, 2018), the Netherlands (van Dijk & Mandemakers, 2018), and Norway (Sommerseth, 2018).

Conditions in early life potentially affected not only the mortality rate at older ages but also income and socioeconomic position. Therefore, the question is whether the health effect observed was due to scarring that appeared later in life or to the inability to accumulate resources across the life course, which could have prevented mortality in later life (see Bengtsson & Mineau, 2009). Did conditions in early life affect health in later life directly or indirectly? While Bengtsson and Broström (2009), for the rural parishes during the 19th century, found effects of being exposed to diseases in the first year of life on both socioeconomic position at age 50 and mortality at older ages, they found no effects of adult socioeconomic conditions on the mortality rate. This finding means that adverse conditions in early life had a direct effect on the mortality rate in later life. The lack of effects of adult socioeconomic positions is consistent with previous analyses of the adult and old age mortality rates for the same period, which showed the lack of a social gradient (Bengtsson & Dribe, 2011; Bengtsson, Dribe, & Helgertz, 2020; Debiasi, 2020).

As the disease environment in the first years of life had such a strong impact on health later in life, one would expect successful public health interventions that reduced infant mortality rates to have had lasting health and economic impact as well. Exactly this finding was made in a series of studies on the introduction of medically trained midwives and isolation hospitals at the end of the 19th century using a causal approach (Lazuka, 2018, 2019, 2020; Lazuka, Quaranta, & Bengtsson, 2016). Similar results were found for the entire country using the individual-level data from 1968 onwards (Lazuka, 2019). The effects were universal and somewhat stronger among individuals from poor socioeconomic backgrounds and at higher baseline levels of disease burden. The fact that interventions directed at stopping the spread of infectious disease had such success strengthens the conclusion that the effects of variations in infectious diseases in the first year of life on later-life health were causal.

The weak effects of parental resources, measured by socioeconomic status, on health in later life for children born in the 18th and 19th centuries (Bengtsson & Lindström, 1997, 2000, 2003; Quaranta, 2013, 2014) are consistent with findings showing that the social gradient in the infant and child mortality rates emerged only in the latter part of the 19th century (Dribe & Karlsson, 2021). It is also consistent with our finding that the social gradient emerged much later for the adults and elderly individuals (Bengtsson & Dribe, 2011; Bengtsson, Dribe, & Helgertz, 2020).

In a study using the SEDD, Bengtsson and Broström (2008) explored the role played by inheritance for longevity by estimating a model of the overall mortality rate among married persons aged 50 years and above, considering genetic as well as socioeconomic and environmental factors. They considered whether these factors had temporary or long-lasting effects on health. They found that the age at death of the mother and the father had persistent impacts on their adult children's overall mortality regardless of sex, even after controlling for early-life factors and socioeconomic and environmental factors throughout the life course. In addition, they found strong birth cohort effects and effects of the disease load in the first year of life on male offspring but were unable to find any effects of socioeconomic status, either at the time of birth or achieved later in life, a result consistent with earlier findings (Bengtsson & Broström, 2008; see also Bengtsson & Mineau, 2008). Birth cohort factors seemed to become weaker, relatively speaking, during the 20th century, as indicated both by the aggregated and individual-level studies for Sweden (Fridlizius, 1989; Lindström, 2015).

Other life-course experiences may also have long-term health impacts. A much-discussed issue is the extent to which childbearing has repercussions for women's health and mortality later in life, as suggested by evolutionary demographic theories about a trade-off between reproduction and longevity (e.g., Westendorp & Kirkwood, 1998). The number of children born reduced post-reproductive longevity for the women in Scania but not for the men (Dribe, 2004b). More importantly, only the landless women showed this association, which was interpreted as support for social and economic mechanisms rather than as evolutionary trade-offs. A similar conclusion was reached in a comparative study, including the SEDD data, which showed that post-reproductive longevity was reduced by having more children, especially for the women who were widowed at a young age (Alter, Dribe, & van Poppel, 2007). This

finding points to the social and economic circumstances under which children are born and reared as crucial for the long-term mortality effects.

8 THE LONG ROAD TO HEALTH AND PROSPERITY — A SUMMARY

The escape from a society characterised by hunger and premature death to a prosperous welfare state was an incremental process. Since the public poor law system provided help only to a few disabled and elderly people, if people could not provide for themselves, most of them had to rely on their families. The pension system, which was introduced in 1913, was not sufficient, and did not cover the most basic costs of living until 1948. Agricultural development in the beginning of the 19th century, together with the trade liberation of farm products, improved the living conditions for the farmers, regardless of whether they owned or rented the land. They used their own savings and altered their household sizes and compositions to relieve them of short-term economic stress caused by variations in harvests and the prices of their products. The workers who lacked these opportunities tried to cope with the economic stress by delaying births instead. Nevertheless, they suffered from increased mortality rates when food prices increased. They shared the burden equally between men and women, children and adults. It was not until the latter part of the 19th century, when job opportunities within industrialisation opened and real wages grew that their food consumption became stable enough on a yearly basis to not affect their deaths.

The improvements in living conditions for the landed, but not the landless, that came with agricultural development were not reflected in the mortality levels. Instead, a social gradient in mortality rates emerged only in the latter part of the 19th century, first for children, then, from the mid-20th century onwards, also for men and women in working ages, and finally for the elderly people. The late emergence of a social gradient in mortality implies that factors other than nutrition were even more crucial.

While food prices had an almost instant effect on mortality among the landless, until the latter part of the 19th century, we find no long-term effects. Instead, exposure to diseases, such as smallpox and whooping cough, in the first years of life had lasting health effects. Since such scarring was often cancelled by selection at younger ages, such improvements did not always appear until later in life. Public health interventions to stop the spread of infectious diseases not only had instant but also lasting effects on individuals, underlining the importance of improving the health conditions for indigent people and children.

Although the landless groups delayed childbirth to cope with short-term economic stress, they were the last group to limit family size. Instead, in the 1880s, the higher classes started to limit family size, followed by the middle class and the farmers. Finally, in the 1920s, the workers started to control family size. Apparently, ways of controlling fertility were known among the workers for a long time, since they delayed births in times of economic stress although not to control family size.

The inheritance law of 1857, which gave equal inheritance to all children regardless of sex, changed the situation for the middle classes and farmers. Having many children made it difficult to transfer enough resources to safeguard the children's economic standing. Thus, children would be less able to support their parents as they retired. Since the workers typically did not leave many resources for their children when they retired, they lacked this motivation. Instead, they benefited from the wage income of their children.

After a period of proletarianisation, the development of the industrial sector and urbanisation opened new opportunities for the working class. Later, in the post-industrial period, the demand for education played a similar role. At that time, people planned their families not to stabilise consumption but to combine work and family life. While no one suffered from hunger any longer and access to health care became practically free, social differences in the mortality rate continued to increase more rapidly than ever before.

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