



Born at the right time? Childhood health and the business cycle[☆]



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ABSTRACT

We analyze the relationship between the state of the business cycle at birth and childhood health. We use a retrospective survey on self-reported childhood health for ten Western European countries and combine it with historically and internationally comparable data on the Gross Domestic Product. We validate the self-reported data by comparing them to realized illness spells. We find a positive relationship between being born in a recession and childhood health. This relationship is not driven by selection effects due to heightened infant mortality during recessions. Placebo regressions indicate that the observed effect is not spurious.

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1. Introduction

Bad childhood health has consistently been related to adverse outcomes later in life. Indeed, factors such as low birth weight have been connected to income, employment and health status at various stages of the adult life cycle by, amongst others, Currie and Hyson (1999), Case et al. (2005), Deaton (2007) and Case and Paxson (2010). In an excellent survey of the literature in this field,

Currie (2009) highlights the scarce attention that has been devoted to the determinants of child health in the first place. In this regard, the main focus has been on the social-economic environment in which the child grew up. In an early survey, Spencer (2003) provides compelling evidence that, for a large variety of countries and time periods, there is a strong link between the social-economic status of the parents and, for instance, the birth weight of the child. In important contributions, Case et al. (2002) and Currie and Stabile (2003) use United States and Canadian data, respectively, to show that parental income is positively associated with childhood health and that this association becomes stronger with age. Currie et al. (2007), Reinhold and Jürges (2012) and Apouey and Geoffard (2013) provide evidence of a similar relationship for, respectively, England, Germany and the United Kingdom. However, they do not find that this relationship becomes stronger with age.

More recently, a second stream of literature has evolved focusing on how childhood health is affected by transitory features of the macroeconomic environment around birth. This literature was pioneered by Dehejia and Lleras-Muney (2004) who show that children born during recessions are generally healthier in terms of birth weight, congenital malformations and post-neonatal mortality. They show that these beneficial effects are attributable both to positive selection (a change in the type of households who have children during recessions) as well as improvements in health behavior during recessions. Although not focusing on childhood health directly, similar beneficial effects of recessions have been documented by Ruhm (2000, 2003 and 2005) and Ruhm and Black (2002) who show that the health of the general population increases and mortality decreases during a recession. Tapia Granados

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and Diez Roux (2009) show that this effect can be found even if very deep recessions such as the Great Depression are taken into account. Challenging this view, Van den Berg et al. (2006, 2009a,b and 2010) and Portrait et al. (2010) find that being born during a recession leads to higher mortality later in life and Böckerman et al. (2007) document an increase in obesity during recessions.

In light of the current recession and the seemingly ambiguous impact that it may have on health outcomes, we use this paper to study how childhood health is influenced by the state of the business cycle at the time the child was born. As we cannot look into the future, we look at how childhood health of individuals born during the previous century was affected by the various recessions that occurred in that century. Complementing the analyses of Dehejia and Lleras-Muney (2004) and Van den Berg et al. (2006, 2009a,b and 2010), we consider health during childhood (instead of at birth or late in life) and perform a cross-country study using a sample of ten Western-European countries (instead of the United States or individual European countries). Following Currie (2009), we interpret childhood health as the result of a health production function that takes parental time and consumption as inputs. Within that framework, we begin by discussing the potential link between recessions and childhood health outcomes.

For the empirical analysis we turn to the retrospective information from the third wave of the Survey of Health, Ageing and Retirement in Europe (SHARELIFE) on a representative sample of roughly 18,000 respondents born in ten Western European countries before 1957. This survey provides detailed information on the health status of the respondent during childhood and the social-economic environment in which he or she grew up. For the macroeconomic data we turn to the World Economy Database of Maddison (2010), which provides internationally and historically comparable time series on the Gross Domestic Product (GDP) of all countries that we are interested in.

As our main variable of interest we use the self-reported childhood health status of the respondent. This is a categorical variable for which the respondents are asked to classify their health status as somewhere in the range between poor and excellent. A common concern of self-reported data is that the recall of the respondents may be low or distorted. To this end, we use the methods of Smith (2009) and Havari and Mazzonna (2011) to analyze the quality of the data by studying the relationship between self-reported general health and objectively observable conditions.

For the state of the business cycle we follow Van den Berg et al. (2006, 2009a,b and 2010) and decompose the GDP into a cyclical and a trend component. Using the decomposition, we identify a recession as a period in which GDP is below its trend value. We also include the actual value of GDP at birth to control for the positive relationship between the level of economic development and access to good health care facilities (Deaton, 2007). In addition, we use a set of household-level and individual-specific background variables to control for the general setting in which a child grew up as well as possible cohort composition effects. As such indicators are likely to be endogenous, we estimate our models both with and without these variables. To ensure that our empirical results are not spurious, we use placebo regressions to assess whether we find the same relationship if we assign individuals to birth years that are not their own. Finally, any relationship between the business cycle and childhood health may be driven by the fact that infant mortality could be anti-cyclical. To this end, we use data from the Human Mortality Database and the methods of Dehejia and Lleras-Muney (2004) and Gerdtham and Ruhm (2006) to analyze whether infant mortality is heightened during recessions.

2. Recessions and childhood health

In general, childhood health can be seen as the outcome of a health production function and can be understood using some form of the life-cycle model proposed by Heckman (2007) and discussed in Currie (2009). In that model, childhood health is produced through inputs of altruistic parents who care about the wellbeing of their children. The parents choose between alternative uses of their resources and their total amount of resources is constrained by earning abilities. Although the model can give rise to some very complex relationships, a number of straightforward conclusions can be drawn from it. First of all, richer parents (that is, parents with a higher social-economic status) should be able to provide their children with higher quality health inputs. Hence, a higher social-economic status should be associated with a healthier child. Second, parental behavior can have (positive and negative) externalities on the health of a child. Thus, children of heavy drinkers are probably less healthy because the side effects of drinking (aggression and neglect) directly affect a child's health. From a macroeconomic point of view, the model suggests that, if the general level of income increases in a country, more parents will be able to acquire better health inputs. Therefore, a higher level of GDP should be associated with a higher level of health.

Within this framework a recession can be considered as a transitory downturn in economic activity, which leads to a temporary drop in income and employment. This leads to an increase in the time that can be spent on healthy activities and a decrease in the consumption of both healthy and unhealthy goods. Ruhm and Black (2002) and Ruhm (2003) suggest that the reduction in the consumption of unhealthy goods is higher than the reduction of healthy goods. Hence, recessions decrease the amount of consumption but improve its composition. Similarly, Ruhm (2000) shows that recessions are associated with an increase in time spent on healthy activities. For the current purpose, this could be seen as an increase in the time spent on nurturing a child. However, the additional time spent at home may also be associated with increased parental stress due to the economic uncertainty that surrounds recessions (Pedersen et al., 2005).

Re-analyzing the data of Ruhm (2000, 2003), Miller et al. (2009) show that the positive relationship between recessions and mortality uncovered by Ruhm is more likely to be driven by a change in the general environment than by changes in individual behavior. On a positive note, such effects could be that recessions reduce the amount of pollution (Chay and Greenstone, 2003) and lower the number of car accidents (Khang et al., 2005). On the negative side, governments may be forced to cut down on health care services. In sum, both direct and indirect factors suggest an ambiguous relationship between the state of the business cycle and childhood health outcomes (see also Kaplan, 2012). Hence, this relationship remains an empirical matter, which we address in what follows.

While the focus of this paper is on developed countries, we may note that Suhrcke and Stuckler (2012) argue that in developing countries different factors may drive the relationship between recessions and childhood health.

3. Data and descriptive statistics

As main data source we use SHARELIFE, a retrospective study conducted as part of the Survey of Health, Ageing and Retirement in Europe (SHARE). Although this data has been used for a variety of studies regarding early-life conditions (see, for instance, Brandt et al., 2012; Doblhammer et al., 2011; Flores and Kalwij, 2011; Havari and Peracchi, 2011; Mazzonna, 2011), to the best of our knowledge, none focus on childhood health. From the data collected from SHARELIFE we construct a measure of childhood

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