

# The High and Increasing Fertility of American Billionaires

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## *Abstract*

Economic theories of fertility, although aimed at explaining why fertility seems fall as income rises, leave open the possibility that beyond some level the effects of income and wealth on fertility will be positive. Most survey data does not allow the study of the very rich, because of non-response and the top-coding of income. Using a unique source, the lists of the Forbes 400 richest men and women, we study how the fertility of the richest differs from the rest of the population. We find (1) the richest Americans have more children than average, and that this difference has growing in recent decades (2) consistent with theoretical expectations, those who inherit their wealth have more children than those "self-made" billionaires (3) and, also consistent with theoretical expectations, billionaire men have higher fertility than billionaire women. The behavior of the extremely rich sheds light on general theories of fertility behavior.

## **Introduction**

The stylized fact that richer people have fewer children has been the challenge of economic and evolutionary theories for more than a century. If childbearing were desirable and a matter of choice, then shouldn't economic success and affluence lead to higher, not lower, fertility?

The answers to this question have come in two forms: first, theories have been developed to explain why the rich might be *expected* to have fewer children (Becker 1960, Willis 1973, Hotz et al. 1993); second, evidence has been found that the rich, after all, do have *more* children (Heckman and Walker 1990, Butz and Ward 1979).<sup>1</sup> The current study follows in this second vein.

Studying the super rich might seem an indirect route to understanding theories of the general population. We view the analysis as a test of the extremes. Even the super rich, we argue, act in a predictable manner. The effects of wealth and income on fertility

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<sup>1</sup>Becker (1960) actually tries this route as well, showing that controlling for contraceptive knowledge, the rich have more children.

are theoretically ambiguous. On the one hand, more resources can enable parents to have more children, but on the other hand, the cost of children in terms of time and money can also increase. At extreme levels of wealth, however, we would expect income effects to dominate substitution effects, making predictions less ambiguous.

These economic theories of fertility become less ambiguous at extremely high income levels for several reasons. From a money perspective, only so much can be spent on children's food, care, and shelter. At the highest level of income, the cost of an additional child need not reduce the amount of income otherwise consumed. Thus the income effect should dominate over simple substitution effects. From a time perspective, there are reasons to think that the rich may also be less sensitive because of their ability to employ arbitrarily large amounts of household and childrearing help. The combination of a nearly non-existent financial budget constraint and a relatively weak time budget constraint make us expect that the wealth of the super rich translates into higher fertility than average.

On the other hand, we do not expect childbearing decisions of the super-rich to be entirely without constraint. In particular, the time and energy invested in childraising comes at the expense of something, and for the super-rich this means either less time and energy devoted to work or less available for leisure, both of which should carry high prices. Within the category of super-rich, therefore, we expect there to be differences in fertility, not according to wealth but according to the way in which wealth was acquired and according to how much time is spent with children. Notably, we expect fertility to be lower for super-rich women than for super-rich men, because of the higher portion of childcare spent by women. We also expect higher fertility for those whose wealth is inherited than for those whose wealth is self-made, based on the idea that the cost of time in terms of foregone income is higher for the self-made super rich.

To summarize, we expect the super rich will have:

1. More children than the general population. The income effects will dominate as described above.

2. This difference will be more pronounced for those who inherit their wealth than for "self-made" billionaires. The reasoning here is that the time and energy invested in childrearing will cost the self-made more in terms of foregone income.

3. This difference will be more pronounced for men than for women. For women, time expenditures make up a larger portion of the cost of childbearing, and so substitution effects will be larger relative to men.

4. This difference will have grown more pronounced over the last two decades, because the gap between the super-rich and the general population has increased over this time

The super-rich tend not to answer surveys. Furthermore, in the unlikely event that a very rich person chose to participate in a survey, his or her income is likely to be top-coded either at the point of data-collection (when incomes are presented as interval values, with an open upper interval) or when public use files are made available to preserve confidentiality. (See Burkhauser et al. 2004 for a discussion.)

Instead of turning to representative samples, therefore, our approach is to rely on a select sample of the richest persons. The Forbest 400 lists provide not only estimates of wealth for the 400 richest Americans but also biographical information on education, marriage, and children ever born. By combining the Forbes list with a general population survey (the General Social Survey), we are able to analyze the the demographic behavior of billionaires in comparative perspective.

Our study builds on an earlier analysis by of the 1982 Forbes 400 list by Essock-Vitale (1984). While Essock-Vitale's study was interested in socio-biological predictions -- that social succuss leads to higher reproduction -- ours is more inspired by New Home Economics. We advance the analysis methodologically by including a representative sample of the general poplation for multivariate analysis. This allows more precise estimates of the effect of being on the Forbes list as well as an understanding of the role of age and education. Finally, our study allows an update of the earlier findings to see if the fertility advantage of the super-rich is changing over time.

The use of the Forbes data has some difficulties. We would like to be able to distinguish between wealth and income and between earned and non-earned income. However, the Forbes list gives only total assets, and the GSS data gives only an estimate of family earnings. Our approach is to measure economic position simply by whether one is on the Forbes list or not. Our assumption here is that the differences in earnings, income, and wealth are all so great between the Forbes billionaires and the general population as to make further refinements unnecessary. Controlling for education is important, since the Forbes list is much more highly educated than the general population, and we would like to distinguish between the effects of affluence and the effects of education. Education is not reported for all Forbes members, and this required some imputation. A final problem -- this time with the GSS -- is that the number of marriages is not asked of the general population. Forbes members, particularly men, who are married more than once have more children. It would be nice to know if the higher fertilty of Forbes members is due to having more spouses or to having more children per spouse.

### **Data and Methods**

We rely on the publicly available Forbes 400 list given on the internet at [http://www.forbes.com/lists/2007/54/richlist07\\_The-400-Richest-Americans\\_Rank.html](http://www.forbes.com/lists/2007/54/richlist07_The-400-Richest-Americans_Rank.html). The average wealth of individuals on the list is 3.9 billion dollars. In addition to wealth, individual age, sex, education, children, and number of marriages is also listed.

Our source for information about the general population is the General Social Survey for 2007, with about 4,500 cases. We coded the Forbes data and the GSS data according to broad educational categories.

In regressions, we pooled the two data sets. We use ordinary least squares estimates for children ever born. (We also estimated ordered probit regressions, not reported here, which produced essentially the same results.) The advantage of OLS is the ease of interpretation of the coefficients.

## Preliminary Findings

The average number of children among the Forbes list in 2007 was 3.2 children, compared to U.S. average of 1.9 children. This represents a slight increase in fertility of the super-rich, from 3.1 children in 1982 (Essock-Vitale, 1984), and a slight decline in fertility of the general population, who had on average 2.1 children in 1982.

Table 1 presents the average number of children of the Forbes members and of the general population.

**Table 1 Average number of children ever born by year of survey**

	1982	2007
<b>Forbes Richest Americans</b>	3.1	3.2
<b>General Population (GSS)</b>	2.1	1.9

**Source: Essock-Vitale 1984 for 1982 Forbes average; own tabulation for 2007 Forbes list and for General Social Survey (1982 and 2007).**

Part of the difference is due to the age of the richest Americans, who are older and from cohorts that had more children across all income levels. On the other hand, the members of the Forbes list are also more educated than average, which, other things being equal would tend to reduce their fertility. In order to sort out these factors we estimated using ordinary least squares the number of additional children the Forbes list members had, controlling for age, education, and marital status. We estimated men and women separately in order to better control for the effects of age.

[Table 2 about here]

For men, in model 1 we control only for the tendency for older men to have more children. Here we see that controlling for age, Forbes members had 0.8 more children than the general population. Controlling for marital status reduces this effect by about 0.1 children, as Forbes members are more likely to be married and less likely to be single. Finally, controlling for education increases the difference between the billionaires and the general population, with the self-made billionaires having 0.9 children more than the general population and those with inherited wealth having 1.0 more children.

The analysis of female Forbes members is less precise, since there are only 39 women on the Forbes list, and 29 for which precise education information is given. We find that in model 3 that women with inherited wealth have about 0.6 more children than average, controlling for age, education, and marital status. The other results are insignificant, with even large coefficients being too imprecise to distinguish from chance effects.

[Table 3 about here]

Looking within the Forbes sample, (see Table 3) we see that the net worth of billionaires has no significant impact on the number of children. Marital status has a large

effect, with the never married single billionaires having more than 2 children less than the married. Being separated has a large positive effect, which we do not understand. The effects of education are insignificant up to the level of a graduate degree, at which point the (barely statistically significant) estimated effect is for those with graduate degrees to have 0.5 children fewer than a high school graduate. Finally, we find that being a self-made billionaire, as compared to having inherited wealth is associated with having 0.2 fewer children. This coefficient has the predicted sign but is not statistically significant, even at the 10 percent level. (This is a close call as the analysis for females alone found that self-made billionaires had significantly fewer children than those who inherited wealth.)

## **Conclusions**

The super-rich behave as we expected from neo-classical micro-economic theory. They have more children, with the difference being greater for men than women. Inherited wealth increases fertility more than self-made wealth. The higher fertility of the super-rich is increasing as the super-rich get richer.

Although we expected income effects to be clearer with the super-rich, it is not a theoretical necessity. If high wealth increased the appeal of non-child related expenditures and activities relative to those involving children, then the super rich would have fewer children than the general population. This appears not to be the case in terms of child quantity, although we do not know anything about the time spent with children. It may be that the rich out-source childcare and education, and actually spend less time and more money on their children.

We have argued that the study of the super-rich sheds some light on theories of fertility across the whole spectrum of wealth and earnings. What it shows is that there is indeed a U-shaped pattern, in which childbearing declines as one moves from the poorest segments of society toward the average and, at some level of wealth, increases again. A future topic of study is at what level of affluence fertility starts to increase.

(References omitted)

**Table 2. The effect of being a billionaire, controlling for other factors**

	Model 1	Model 2	Model 3
2007: MALE			
Constant	-1.321***	0.903**	0.638*
Age	0.089***	0.028*	0.040***
Age*Age*1000	-0.440***	0.005	-0.122
Marital Status (Ref: Married)			
Single		-1.480***	-1.484***
Widowed		0.197	0.080
Divorced		-0.423***	-0.475***
Separated		0.147	0.022
Highest Degree (Ref: High School)			
Lower than High School			0.495***
Bachelor			-0.212**
Graduate			-0.471***
<b>Forbes (Ref. GSS)</b>			
<b>Selfmade</b>	<b>0.727***</b>	<b>0.596***</b>	<b>0.864***</b>
<b>Inherited</b>	<b>0.852***</b>	<b>0.775***</b>	<b>1.037***</b>
Adjusted R-Square	0.258	0.342	0.359
Cases in Regression	2354	2351	2334
Forbes (cases: 361)	361	361	344
GSS (cases: 2003)	1993	1990	1990
2007: FEMALE			
Constant	-0.521*	0.799**	0.472°
Age	0.074***	0.036**	0.054***
Age*Age*1000	-0.376***	-0.122	-0.302**
Marital Status (Ref: Married)			
Single		-1.010***	-1.016***
Widowed		0.230*	0.111
Divorced		-0.171*	-0.192*
Separated		0.759***	0.477**
Highest Degree (Ref: High School)			
Lower than High School			0.960***
Bachelor			-0.558***
Graduate			-0.866***
<b>Forbes (Ref. GSS-Member)</b>			
<b>Selfmade</b>	<b>-1.289</b>	<b>-0.849</b>	<b>-0.230</b>
<b>Inherited</b>	<b>-0.002</b>	<b>-0.049</b>	<b>0.615*</b>
Adjusted R-Square	0.139	0.198	0.282
Cases in Regression	2538	2538	2526
Forbes (cases: 39)	39	39	29
GSS (cases: 2507 )	2499	2499	2497

\*\*\*<0.001 \*\*<0.01 \*<0.05 °<0.10

Table 3. Predicting fertility within the Forbes list, ordinary least-squares estimates for both sexes combined.

Constant	0.864
Age	0.043
Age*Age*1000	-0.010
Sex (Ref. Male)	-0.382
Networth	-0.022
Number of Marriages	0.551***
Marital Status (Ref: Married)	
Single	-2.115***
Widowed	-0.926*
Divorced	-0.799**
Separated	2.722°
Highest Degree (Ref: High School)	
Lower than High School	-0.201
Bachelor	-0.207
Graduate	-0.478°
Selfmade (Ref. Inherited)	-0.181

Adjusted R-Square 0.206  
 \*\*\*<0.001 \*\*<0.01 \*<0.05 °<0.10