A Comparison of Wealth Estimates for America's Wealthiest Decedents Using Tax Data and Data from the Forbes 400

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Statistics of Income, IRS

The views expressed in this paper represent the opinions and conclusions of the authors alone. They do not represent the opinions of the Internal Revenue Service or the Treasury Department.

Introduction

Measuring the wealth of the Nation's citizens has long been a topic of interest among researchers and policy planners. Unfortunately, such measurements are difficult to make because there are few sources of data on the wealth holdings of the general population, and most especially of the very rich. Two of the better-known sources of wealth statistics are the household estimates derived from the Federal Reserve Board of Governor's Survey of Consumer Finances (SCF) and estimates of personal wealth derived from estate tax returns produced by the Statistics of Income Division (SOI) of the Internal Revenue Service. In addition, Forbes magazine has annually produced a list, known as the Forbes 400, that includes wealth estimates for the 400 wealthiest individuals in the U.S.

There are important structural differences between SOI, SCF and Forbes estimates of wealth, particularly in the source of the data, segments of the population covered and unit of observation. The SOI estimates, which are derived from data reported on federal estate tax returns, are limited by the estate tax filing threshold, meaning that only a relatively small portion of the wealth distribution, representing the nation's wealthiest individuals, is included. The SCF is also somewhat limited in that it does not provide estimates of the topmost segment of the wealth distribution because the sample intentionally excludes individuals with net worth above the threshold represented by the Forbes 400; the SOI estimates do attempt to include this segment of the population, but small sample sizes limit the accuracy.[1] Thus, the Forbes estimates are often seen as a source of data for "filling in" the topmost segment of the distribution of wealth in the U.S.

[1] See Johnson and Moore, 2005.

This article focuses on the estimates of wealth produced for the Forbes 400 and their relationship to data collected by SOI. While those included on the annual Forbes 400 list represent fewer than .0002 percent of the U.S. population, this group holds a relatively large share of the Nation's wealth. For example, some estimates show that the share of wealth controlled by these top wealth holders tripled from just above 1percent in the early 1980s to above 3.5 percent at the peak in 2000, before declining to just below 3 percent by 2002.[2] Using the 2007 SCF estimates, the Forbes 400 accounted for estimated collective net worth of almost $1.6 trillion, or about 2.3 percent of the total U.S. household net worth owned by the rest of the U.S. population.[3] In all years examined, the threshold for inclusion in the Forbes estimates was well above the effective estate tax filing threshold; therefore, there should be a 100 percent overlap between these two sources of wealth information. Examining the Forbes and SOI data together should provide insights into strengths and weakness of both data sources for economic analysis. To the extent that data from these sources prove different, this analysis should also provide insight into estate planning issues that influence measures of wealth derived from estate tax data and contribute to a fuller understanding of economic well-being. Finally, by examining, to the extent possible, the form of wealth held by these top wealth holders, this research may inform the ongoing debate surrounding the effects of the Federal estate tax on the general economy.

Background

There is a long history of using wealth data reported at the time of a decedent's death as a source for estimating national wealth using an estimation methodology known as the "estate

[2] See Kopczuk and Saez, 2004 p. 30.
[3] See Kennickell, 2009.

multiplier technique."[4] SOI produced its first estimates of personal wealth using U.S. estate tax returns (IRS Forms 706) for 1962.[5] These returns provide a rich data source from which to study the nation's wealthiest individuals. The estate tax return contains a complete listing of a decedent's assets and debts, as well as a demographic profile of the decedent and information on the costs of administering the estate. All assets reported on Form 706 are valued as of the date of the decedent's death, although special valuation rules apply for certain uses of real estate and for assets that decline in value within 6 months of a decedent's death.[6] The decedent's share of jointly held assets, as well as any assets over which the decedent held power of appointment are also reported, as is the face, but not cash, value of all life insurance policies. Valuations of business assets are frequently subject to significant discounts when there is evidence that a decedent's fractional ownership share affects marketability.

Forbes magazine has published a list of the 400 richest Americans annually since 1982. The wealth estimates for the individuals on the list are produced through investigative research and take into account interviews with employees, competitors, customers, attorneys, ex-spouses and securities analysts, as well as reviews of Securities and Exchange Commission (SEC) filings and legal documents. Privately held companies are valued by coupling estimates of revenues or profits with prevailing price-to-revenues or price-to-earnings ratios for similar public companies. In cases where wealth is dispersed among family members but can be traced back to one

[4] See Atkinson and Harrison, 1978.

[5] See Scheuren, 1967.

[6] Under Internal Revenue Code (IRC) Section 2032A, real estate used in an ongoing business or farm can be valued based on its present use, rather than its market value, in cases where, for example, land used in farming would be considerably more valuable if developed for residential housing or commercial uses. The reduction in value is limited and the heirs must agree to continue the business or farm for 10 years after the decedent's death in order to qualify.

individual, the total amount is shown for the individual with the notation "& family." Assets held jointly with a spouse are also treated as if owned by the individual. Similarly, assets held in trust are generally assigned to the grantor, or the living family member considered in control of the assets. Asset values are rounded to the nearest 100 million dollars and stocks are valued on August 31. Forbes acknowledges that its analysts do not have knowledge of all assets belonging to the individuals on the list, and describes the published estimates as "deliberatively conservative." [7]

For its estimates, Forbes magazine uses net worth as the measure of wealth. For the SOI data, net worth is calculated as total assets minus debts, where total assets is calculated using the value of each asset on day that the owner died. An estimate of the cash value of life insurance replaces the reported face value and any reduction in value for real estate allowed under IRC§ 2032A is disregarded in this calculation.

Since the publication of the 1962 report, SOI has sought to improve the accuracy of its wealth estimates. One such effort included the first examination of the relationship between Forbes 400 estimates to data reported on Federal estate tax returns.[8] This research, using only about 30 estate tax returns filed for individuals who were included on the Forbes list for 1982 -1984, found that in 79 percent of cases the SOI value was lower than the Forbes estimate.[9] In fact, SOI estimates of net worth were, on average, 35 percent lower than estimates produced by Forbes for the same individuals.

[7] See Miller, 2009, for a more detailed description of the methodology Forbes uses to calculate wealth.

[8] McCubbin, 1994 p. 367.

[9] Ibid, p. 368.

The Data

We began by attempting an exact match, based on name, between estate tax returns filed for 1982 – 2008 and the 1,378 individuals who have appeared in the publicly available listings of the Forbes 400 covering the same period. The use of name-matching algorithms in computer software generated an initial group of several hundred individuals that appear in both datasets. We then conducted a case-by-case search, augmenting the notices of deceased members of the Forbes 400 list that accompanies its publication in most years with independent data, to determine if each of the remaining individuals who have appeared in the listing was living or deceased.

Using these techniques, we identified a group of 376 individuals who have been listed in the Forbes 400 and for whom an estate tax return was located in SOI's database. This group also includes a small number of individuals for whom estate tax returns were filed in 2009 or 2010, but for whom only a limited set of IRS data were available because their returns had not yet been processed by SOI. Estate tax returns could not be located for 20 individuals who had appeared in the Forbes 400 and are now deceased. With additional research, we were able to verify that, the individuals' estates were not required to file for various reasons.[10]

By comparing SOI data to the annual thresholds for inclusion on the Forbes 400 list, we were also able to identify 26 individuals whose net worth at death, as reported on the estate tax return, was sufficient for inclusion in the contemporaneous Forbes 400, but who never appeared on the list. For about half of these individuals, the failure to appear on the list appears to be due to the method Forbes uses to assign wealth that is dispersed across families. Among

[10] For example, for some Forbes decedents, it was clear that most of the Forbes-identified wealth was owned through a continuing trust and not outright by the decedent.

the other half of these individuals, there is a small number whose wealth was earned primarily through creative endeavors; the value of creative assets may be particularly difficult to estimate except at the time of auction or other sale.

Results

The final Forbes-SOI matched dataset contained 376 records, consisting of 304 male and 72 female decedents. Looking first at male decedents, the mean age was 80 with more than half the sample age 80 or older. Most, 74 percent, were married, with only 26 percent widowed, single, divorced or separated. For this group, the mean estate tax net worth was $405.9 million, while the median value was $174.1 million. For females, only 18 percent were married while 82 percent were widowed or otherwise single. The mean estate net worth for women was slightly higher than that for men, $495.9 million, but the median was lower, just $110.4 million.

As seen in Figure A, the asset holdings of decedents in the dataset differed by sex and marital status. For each class of decedent, stock, which includes shares of both publicly traded and closely held corporations, accounted for the largest share of any asset type, between 41.1 and 50.8 percent of total assets. Bonds, cash, real estate, including real estate partnerships and real estate investment trusts (REITS), and business assets, which include partnerships, farms, and other unincorporated business, typically combined to make up the bulk of the non-equity portion of the estate, although the percentage held in each asset type varied markedly by sex and marital status. Males held, on average, more of their portfolio in business assets and less in bonds than their female counterparts. This may reflect both the higher incidence of business ownership among men and the much higher percentage of women who were widowed, as widowed decedents may have divested active ownership interest in a late spouse's businesses

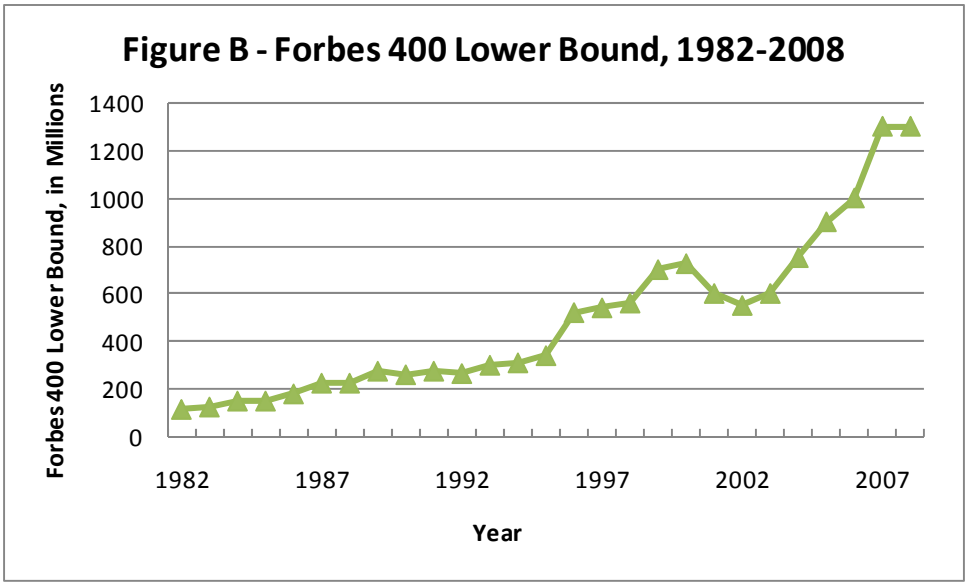
following his or her death. Unmarried decedents, most of who were widowed, tended to hold a more conservative portfolio than their married counterparts, a fact that may relate to the higher average age of widowed decedents and reflect portfolio adjustments made for estate planning purposes. For both males and females, unmarried decedents held, on average, a greater share of their portfolios in bonds and cash than married decedents, and smaller shares in stock, business assets, and real estate.

Figure A – Percentage Asset Composition, by Sex and Marital Status

Asset Type	Males			Females		
	All	Married	Unmarried	All	Married	Unmarried
Stock	45.6	47.1	41.1	43.2	50.8	41.5
Bonds	12.2	10.8	16.0	17.8	4.8	20.5
Business assets	12.4	13.1	10.6	6.4	7.9	6.1
Real estate	9.8	10.0	9.1	11.5	23.2	8.9
Cash	5.4	5.2	6.1	6.9	4.5	7.4
Other assets	5.2	5.4	4.6	8.0	6.5	8.3
Mortgages/notes	4.3	3.0	8.1	4.3	0.6	3.1
Retirement assets	1.3	1.6	0.3	1.3	1.6	0.6
Insurance	0.5	0.6	0.4	0.5	0.1	0.1

One of the challenges posed by this analysis is the fluid nature of the Forbes 400 listing. Over the period examined, the threshold for inclusion on the Forbes list increased in most years, starting from a low of $115 million in 1982 and rising to $1.3 billion by 2007 (see Figure B). Thus, individuals included on the list in one year may be absent in the next even if their wealth remained more or less constant, because the threshold for inclusion might increase as others' fortunes surpass those listed in any given year. Members can drop off the list for other reasons as well; for example a member's wealth may diminish due to economic conditions or because of a significant charitable donation. Individuals may also die, making room for others. Thus, we include a variable lag in the dataset which indicates the number of years between being

included in the Forbes list and the year of death (see Figure C). Of the 376 decedents in the file, 181, or about 48.1 percent, were included in the Forbes listing published in the year of their death or in the year prior to death. For the purposes of our analysis, we have categorized these decedents as 'on the list at death.' Most of these decedents were male; there were 33 women in this group, only 18.1 percent of the total.



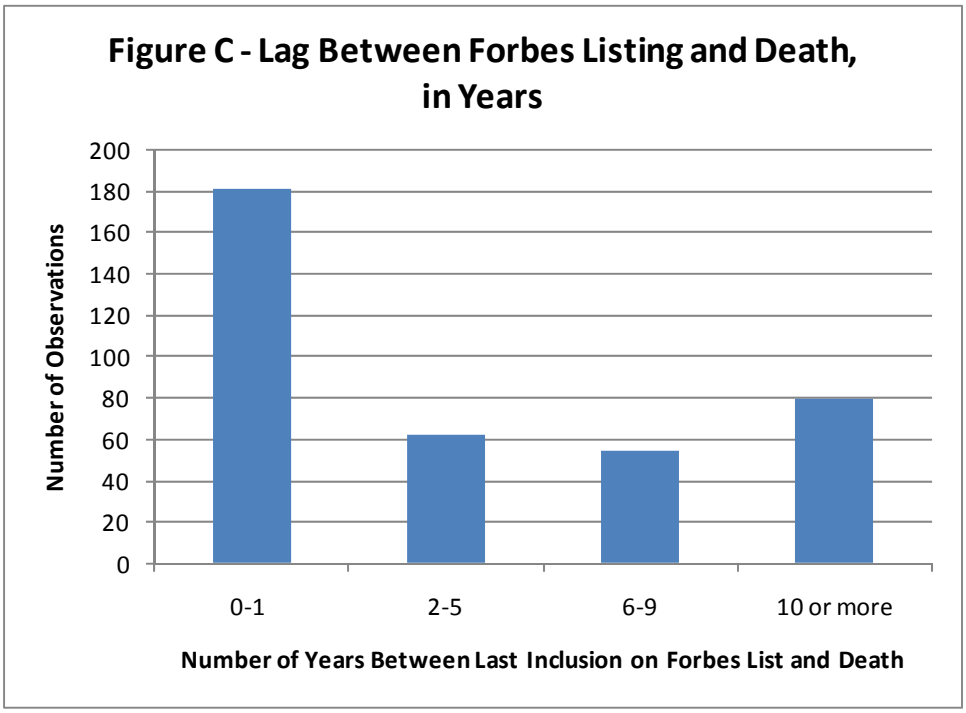


Figure D provides information on the status of a decedent's membership on the Forbes 400 list at the time of death for the full linked sample in three categories: those who were listed either at the time of death or within one year of death; those whose net worth declined for some observable reason between the time that they were listed and death; and those who dropped off the list prior to death seemingly because the growth of their individual net worth did not keep pace with increases in the inclusion threshold.[11]

Figure D – Estate and Forbes Data By Forbes Membership Status[1]

Variable	On the List at Death		Dropped From List Prior to Death			
			Net Worth Declined		Threshold Increased	
	Female	Male	Female	Male	Female	Male
# of observations	33	148	27	67	12	89
Avg. net worth (SOI)	845,571,155	621,061,811	419,751,211	213,798,067	102,432,607	192,608,904
Avg. Last Forbes estimate	1,347,929,848	1,530,097,149	838,260,833	689,607,851	417,281,111	404,659,494
Average age	80.51	79.05	87.42	79.91	88.19	80.48
Forbes Ratio	0.60	0.48	0.62	0.32	0.30	0.46
Pct. of total assets:						
Stock	50.2	54.7	50.1	39.2	34.8	40.4
Bonds	17.4	11.5	12.2	13.7	21.9	13.7
Cash	4.8	4.4	3.1	7.7	11.8	6.2
Mortgages notes	2.3	4.0	5.6	5.8	2.0	4.4
Retirement assets	0.8	0.9	0.1	2.1	1.2	1.5
Businesses	4.5	10.4	8.6	13.8	8.3	16.1
Real estate	10.8	8.2	14.8	11.7	11.6	12.1
Insurance	<0.1	0.4	<0.1	0.7	0.2	0.8
Other assets	9.3	5.6	5.5	5.3	8.2	4.9

[1] All money amounts have been converted to constant 2008 dollars.

Predictably, the average reported estate tax net worth in Figure D is highest for decedents in the Listed at Death category. The lowest average was reported for those in the Threshold Increased category. This pattern is also apparent in the average Forbes estimates of wealth. Interestingly,

[11] Decedents were assigned to "Net Worth Declined" category by Forbes based on information from Forbes that indicated either a large financial setback or because Forbes revised a prior year estimate because there was reason to believe that estimate was much too high. Decedents were assigned to the "Threshold Increased" category based on the Forbes Magazine estimates for 'near misses' in the year they were dropped from the list.

the Forbes Ratio, defined as the value of net worth reported on estate tax returns divided by the Forbes estimate of net worth, also varies between these groups, but the pattern is notably different. For the decedents in the Threshold Increased group, the mean ratio is 0.42. For decedents in the Net Worth Declined group, the mean ratio is 0.37. For decedents in the Listed at Death group, the mean ratio is 0.50. ANOVA analysis rejects the null hypothesis that these three population means are equal at the 10% level ($F = 2.51$ $p=0.824$).

Comparing Forbes and Estate Valuations

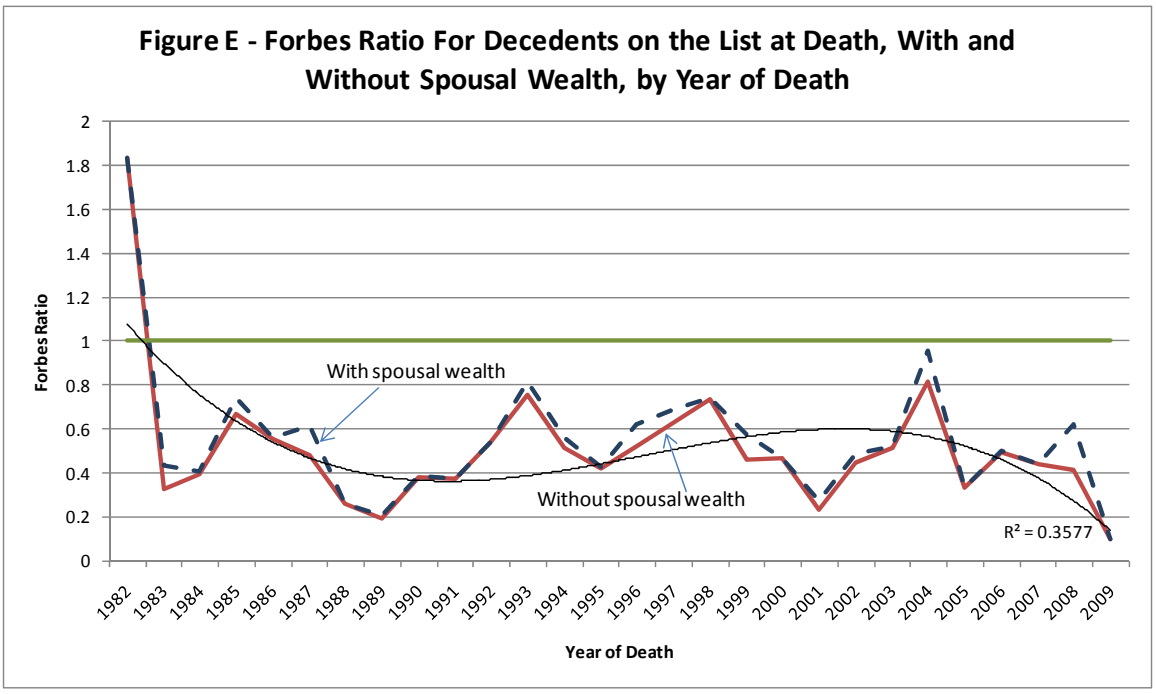
In this section, we compare Forbes estimates to Estate tax data, limiting the analysis to the 181 decedents who were on the list at death. We excluded decedents with a longer lag between last inclusion on the Forbes list and death, because significant changes in wealth during these longer lags due to personal financial developments and variations in the macro economy could distort the analysis.

Figure E displays the average Forbes Ratio by year of death. Again, this Ratio equals the value of net worth reported on estate tax returns divided by the Forbes estimate of net worth, for decedents who were on the list at death. If the estimates were identical, we would expect a straight horizontal line at 1.0. For these data, however, the average ratio is less than 1.0 for all but one year. For the solid line on the graph, the estate value reported for tax purposes is used to compute the ratio. While there is considerable year to year variation in the mean value, the over all trend is fairly consistent, with a slight overall decrease between 1982 and 2010. The range of average values by year varies from a low of 0.10 to a high of 1.83. On average, the overall Forbes Ratio was 0.50, meaning that the values reported for tax purposes were about

half of those estimated by Forbes. However, for 15.5 percent of decedents the estate net worth was actually larger than the Forbes value.

Although some of the year-to-year variation shown in Figure E is due to a relatively small number of observations in most years, some of it is certainly structural. Recall that the Forbes estimates for married persons treat joint wealth, including wealth owned by extended family members in some cases, as if it belongs to the listed individual, while for estate tax purposes only assets owned solely by a decedent are included. Thus, for married individuals in our data set, some of the difference can be attributed to the missing spousal/family wealth. We can partially adjust for this by adding information reported for jointly held assets, both those held as joint tenants and community property, to the reported tax values. While still omitting assets owned solely by a spouse or other family members, the dashed line in the graph shows that, for some years, this additional wealth increases the ratio closer to 1. In fact, for all married individuals in the file, the average overall Forbes Ratio increases from .46 to .53 when including these jointly held assets.

Another source of difference between the Forbes and tax values is the explicit recognition of valuation discounts in valuing some assets for tax purposes. Ownership interests that are considered fractured, meaning that a decedent owns only a partial interest in an asset such as a business or real estate venture, can give rise to a discount in recognition that it may be difficult to find a willing buyer for an assets when it will be owned jointly with someone else. Discounts of up to 50 percent or more due to the reduced marketability of the partial interest are not



uncommon.[12] In 2004, SOI began collecting data on the incidence and magnitude of discounts reported for estate tax purposes. Almost two-thirds, or 64.4 percent, of returns in our data set filed on or after 2004 included some assets for which a valuation discount had been reported. Adding the value of these discounts to the estate tax values increased the average Forbes Ratio for this sub-group from .47 to .54. By adding in both the value of discounts and the value of spousal wealth as described above, the average Forbes Ratio for this sub-group increased to .58. It is widely believed that the use and size of these discounts has increased over time as courts have repeatedly supported this practice, within reasonable limits. In total, these may account for a portion of the relatively small decline in the Ratio over the period.

[12] A Family limited partnership (FLP) is a business arrangement, used by for both tax and succession planning purposes, whereby financial and business assets are transferred by the owner into the FLP for which the donor is a partner and potential heirs are limited partners. Because of the way the ownership interests are divided, this arrangement frequently generates significant valuation discounts for the estate. For a more complete description of FLPs, see Raub, 2007 p. 121.

While these structural issues explain a portion of the differences between the Forbes estimates and tax values, we wondered if, in addition, there are some financial profiles that are easier for Forbes to estimate than others. We have already noted that there are some individuals in the estate data whose net worth at death would have qualified them for the Forbes list, but who were never listed. Figure F shows that portfolio differences, in aggregate, between individuals with high and low Forbes Ratios can be quite striking.[13] For those whose ratio was at least 0.78, the highest quartile group, the portfolio is dominated by stocks and bonds. Publicly-traded stocks made up just over half of the overall value of stocks, while the rest was held in closely-held stocks, which are not publicly-traded. Business assets, defined here as non-corporate businesses, make up a relatively low proportion, as do real estate and cash. In contrast, for those whose Forbes Ratio was less than 0.10, the lowest quartile group, the data reveal an aggregate portfolio that is quite diversified. Equity investments account for less than one-third of the total, with real estate assets making up more than 15 percent, three times larger than for the higher ratio group. Other notable differences for the lowest-ratio group include a much higher concentration of non-corporate business assets and mortgages and notes. Business assets are notable because of the subjective nature of valuating business, especially relatively small businesses for which a portion of the value may be derived from the personality or skills of a founder. The death of such a key person may have a strong adverse affect, at least initially, on the valuation of the firm and could account for a significant share of the difference between the tax and Forbes values in some cases. Overall, the portfolio of the high-ratio group is dominated by assets for which there is a ready, measurable market, making valuation for both estate and

[13] We focus here on those individuals whose return data was collected after 1988 because we have separate tax data on holdings of publicly traded and closely held corporate stock. While publicly traded stock can be easily and accurately valued using exchange data, closely held corporation values should be more difficult to compute and more subjective in nature. The portfolio allocations for each of the quartile groups constructed with the full, 181-decedent sample were very similar to those based on the smaller, 136-decedent sample for which the additional information on stock-type was available.

Forbes purposes relatively straightforward, while the portfolio of the low-ratio group contained higher concentrations of assets for which valuation is much more subjective, and which are more frequently subject to valuation discounts. It is interesting to note that the shares of stock held in publicly traded and closely held corporations are similarly allocated in each quartile group. While this may suggest that valuation issues for these two assets are not a significant driver of the ratio differences observed across the quartile groups, it is impossible to be certain without examining the individual Forbes balance sheets.

Figure F - Forbes Ratio by Quartile Group

Asset Type	Percentage of Total Assets, by Forbes Ratio Quartile Group		
	Low quartile (ratio < 0.10)	Middle quartiles (0.10 < ratio < 0.78)	High quartile (ratio > 0.78)
Stock	31.3	61.5	61.2
Publicly traded	14.9	26.9	31.2
Closely held	16.3	34.6	30.1
Bonds	13.6	11.3	15.2
Business assets	12.8	7.1	8.5
Real estate	18.4	5.3	5.3
Cash	6.8	5.4	2.3
Other assets	8.8	5.6	6.1
Mortgages/notes	5.7	2.3	0.4
Retirement assets	1.1	1.2	1.0
Insurance	1.3	0.1	<1.0

As another way to assess the relationship between the Forbes estimates and wealth reported on estate tax returns, we used OLS regression to model the Forbes Ratio using demographic and financial data from all of the tax records in the data set.[14] We used a natural log transformation of the Forbes Ratio as the dependent variable. The results of this regression are shown in Figure G. The R-squared value of this model is 0.6806, meaning that it can predict 68% of variation in the Forbes Ratio, and the model has a joint F value of 49.15. Using GLS type heteroskedastic

[14] This analysis includes all 376 observations in the data set and includes a dummy variable to indicate whether or not a decedent was on the Forbes list at the time of death. As a reminder, detailed demographic and portfolio data were not available from Forbes.

robust standard errors did not substantially change the results of this model. Of the original 376 observations in the dataset, 362 observations were included in this model, while 13 records were excluded because they were for returns filed in 2008 or 2009 and lacked a full set of asset values. Binary variables were included to account for marital status and gender. Additionally, binary variables were included to indicate groups that had died while on the Forbes list and groups whose reported estate values exceeded the Forbes estimates of wealth (Forbes Ratio >1).

Figure G - An Estimate of the Forbes Valuation-Estate Wealth Ratio

Estimate of SOI Data/Forbes Estimate of Wealth Ratio				
Variable	**Parameter Estimate**	**Standard Error**	**t Value**	**Pr > |t|**
Intercept	-0.26709	0.10878	-2.46	0.0146
SOI/Forbes > 1	0.52704	0.0266	19.81	<.0001
Married	-0.11037	0.05191	-2.13	0.0342
Male	-0.00188	0.02999	-0.06	0.95
Married*Male	0.134	0.05559	2.41	0.0164
Age	-0.00043289	0.00089868	-0.48	0.6303
Year of Death[1]	-0.00364	0.00141	-2.57	0.0105
Died While On List	-0.00409	0.01873	-0.22	0.8271
ln(Stock)[2]	0.01491	0.00248	6	<.0001
ln(Bonds)[2]	0.00516	0.00127	4.05	<.0001
ln(Cash)[2]	0.01536	0.00455	3.38	0.0008
ln(Mortgages and Notes)[2]	-0.00080705	0.00147	-0.55	0.5844
ln(Retirement Assets)[2]	-0.00047642	0.00141	-0.34	0.735
ln(Other Business Assets)[2]	0.00072962	0.0015	0.49	0.6277
ln(Real Estate)[2]	0.00588	0.00263	2.24	0.0258
ln(Insurance)[2]	-0.00268	0.00159	-1.69	0.0918

[1]Year of death value is re-centered at 1982=0.
[2]All assets are in 2008 constant dollars.

Of the factors that contribute to the difference between the Forbes estimate of wealth and the SOI measure of estate wealth, there are several that seem particularly important. The fact that a decedent's wealth was greater than the Forbes estimate was statistically significant. The group of decedents whose Forbes' estimate exceeded the SOI estimate was relatively small (at

49), and we suspected that this group could better be modeled as distinct from the other observations. We tested a model that included interaction variables based on this group as well, but an F test rejected the hypothesis that the interaction terms were significant.

The decedent's marital status and the interaction term of marital status and gender are statistically significant in this model. This result can likely be explained because of the differences between the way that the Forbes and tax estimates assign ownership of assets within families. Year of death is also statistically significant. Although the parameter estimate for this variable is very small, it does suggest a slight decline in the average Forbes Ratio over time that is consistent with Figure E.

A number of individual asset portfolio components also contribute to the difference between the Forbes and estate wealth measures. The coefficients for stock, bonds, cash, real estate and insurance are all statistically significant at the 90% level. An increase in each of these asset values in a decedent's estate portfolio has a predicted effect of reducing the difference between the Forbes estimate of wealth and the estate value, with the exception of insurance. These results seems in line with Figure F, which suggests that assets which can be difficult to value or for which valuation is somewhat subjective until time of sale might be over-valued by Forbes and valued conservatively for estate tax purposes. Interestingly, within this group, cash had the largest predictive effect, with a one percent increase in cash held by the decedent's estate leading to an increase in the SOI/Forbes Ratio of one and a half percent. We speculate that the presence of large cash amounts in an estate likely represent large, illiquid assets sold in anticipation of death in order to simplify the portfolio or reduce unnecessary expenses.

Likewise, bonds, which tend to receive preferred tax treatment, may indicate portfolio reallocations for tax planning purposes.

Summary

Using a unique data set that combines estimates of wealth from Forbes magazine's annual listings of the wealthiest 400 Americans for 1982-2009, with data reported on federal estate tax returns filed for current and former listees who have died, we have shown that, on average, the values reported for tax purposes are approximately half those estimated by Forbes. Although the ratio of these two estimates, dubbed the Forbes Ratio, varies a great deal due to the relatively small sample sizes and the unique nature of each decedent in this data set, we have shown that the overall trend of this average has been relatively stable over time, with perhaps a slight decline. Using detailed information reported on the tax returns, we have also shown that a portion of the difference measured by the Ratio is due to structural differences between the two sets of estimates. Specifically, Forbes includes the joint assets of married persons in their estimates, while for tax purposes only assets owned by the deceased partner are reported. Adding even a small portion of the surviving spouse's assets to the tax-based net worth values decreases the difference between these estimates significantly.

The estate tax data also allowed us to examine portfolio allocation differences between individuals whose Forbes Ratio was relatively close to 1 and those for whom the Forbes Ratio was extremely low. The notable differences between the portfolios of these two groups led us to explore this difference in greater detail. The regression results seemed to reinforce trends evident in the tabular data. Both suggest that tax values and Forbes values were in closest agreement when valuation issues were relatively objective, but much further apart when the

portfolio was dominated by assets for which valuation required a greater degree of subjectivity or was made up of assets that were difficult to observe.

This research highlights the inherent difficulties of valuing assets which are not highly liquid. The portfolios of very wealthy individuals are made up of highly unique assets and often the value of assets, such as businesses, are very closely tied to the personality and skills of the owner. Determining a precise value for these assets can involve more art than science. Previous researchers have suggested that differences between tax and Forbes estimates are due to evasion; however, these are high dollar-value returns filed for very well-known decedents and so they tend to be carefully prepared by licensed professionals. This suggests that, while values reported for tax purposes may be conservative, they will fall within legally defensible parameters. Estimates of value for other purposes may be much more optimistic, but perhaps no more precise than those provided to the IRS, and so, contrary to the Forbes' assertion that its methodology is conservative, these results suggest that it is actually generous in some cases. Without actually selling a difficult to value asset, it may be impossible to determine a precise "market value," especially in times of economic volatility. These data provide an important reminder that data reported for administrative purposes can be legally acceptable yet fundamentally different from those collected for other purposes. This should be an important consideration when attempting to use data to answer specific research questions or when comparing results from several sources, and even suggests that in some cases, multiple data sources should be examined in order to obtain truly robust results.

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