The spirit of capitalism among the income classes

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ABSTRACT

This paper tests the consumption-based capital asset model within the context of the spirit of capitalism. The spirit of capitalism asserts that consumers gain utility not just from consumption of goods and services, but also from the social status obtained from wealth. We examine two asset pricing models developed by Bakshi and Chen (1996) that employ wealth in the utility function, for households sorted by income quintiles. In the first model, households obtain utility from both consumption and the social status that comes from their own wealth. In the second model, households gain utility from both consumption and the social status obtained from their own wealth relative to the wealth of other peer households. Our results indicate that both models are inconsistent with the data regardless of income. However, using cointegration methods as a diagnostic tool, we find that the data are "loosely" consistent with the spirit of capitalism, at least for the upper income quintiles.

1. Introduction

The notion that wealth enters the household's utility function is a popular idea among financial economists wishing to explain consumption patterns. In many asset pricing models, wealth represents future consumption and may be used by households to reduce their consumption volatility. In the "spirit of capitalism" literature, however, wealth brings additional utility in the form of social status. The literature on the spirit of capitalism was introduced by Max Weber in the early 1900s as he argued that capitalism and the accumulation of wealth were consistent with Christianity.[2]

In more recent times, Bakshi and Chen (1996) further develop this idea by deriving several asset pricing models that are designed to empirically measure the spirit of capitalism. Their work, like most other empirical analyses of the consumption-based asset pricing model, uses U.S. aggregate consumption and wealth data within the context of a single representative agent. The representative agent model employed with aggregate data, however, ignores important differences in wealth among households. Such differences in wealth are crucial to an empirical analysis of the spirit of capitalism.

Our paper contributes to the spirit of capitalism literature by examining the economic behavior of households with different levels of wealth. Specifically, our analysis employs five representative households (agents) based on their income quintiles. Empirical evidence indicates that on average households sorted into income quintiles are a good proxy for households sorted by their total wealth, defined as income, housing value, and financial assets. Both the Survey of Consumer Finance, published by the Federal Reserve, and the Consumer Expenditure Survey, published by the Bureau of Labor Statistics, support this finding.

In this heterogeneous environment, consumption and wealth decisions for households seeking to gain social status critically depend on the wealth levels of peers, which are typically households in neighboring social strata. According to Duesenberry (1962, p. 30), people will often make comparisons to others with similar income levels. These comparisons will result in either favorable or unfavorable outcomes. Duesenberry conjectures that unfavorable comparisons bring about changes in household consumption of goods and services that may help to eliminate this disparity. For example, high-income households, say in the fourth income quintile, will manage their consumption and wealth based on the perceived wealth of households in the same quintile, or the nearby third or fifth quintiles. While the wealth of acquaintances is typically not known, it can be reasonably deduced. Individuals are quite perceptive, for instance, in determining the relative value of primary residences by their size, style, and location. Therefore, it is important to include housing values in the definition of wealth.

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[2] Weber's work was originally published in two articles in 1904 and 1905 in German, under the title "The Protestant Ethic and the Spirit of Capitalism." Subsequent editions have been translated and published since that time, see for example, Weber (1958).

Our test results, across all income quintiles, fail to support the spirit of capitalism models developed by Bakshi and Chen (1996). The crux of the problem lies in the parameter estimates, λ, for the spirit of capitalism, which are frequently negative and statistically insignificant. Such estimates imply that economic agents do not view wealth as a means of gaining social status. Furthermore, we find internal inconsistencies with other parameter estimates for these models. There are several possible explanations for the empirical failure of the models. First, the models may be too tightly parameterized, meaning that there are narrow acceptable ranges for each of the parameters estimated. Second, they depend on households operating with a specific utility function — power utility. Lastly, the models require the transformation of variables into growth rates, thereby losing some of the information found in the levels of the data. We relax these restrictions and test the data within the framework of cointegrating techniques. Cointegration techniques can assist in the task of determining whether the data are consistent with the spirit of capitalism.

Our cointegration results are illuminating. We find that the consumption of higher income households depends in part on the wealth of other households, but not on their own wealth. In other words, the wealth of upper income households is not significant in explaining their consumption. It turns out that the wealth of others, which we refer to as "social wealth" and an index of the broad stock market, is significant. This finding suggests that higher income household consumption, social wealth, and the stock market are in a long-run equilibrium. Our findings also show that short-run deviations from this equilibrium lead to predictable *changes* in both future household consumption as well as own-wealth, as upper income households strive to "keep up with-" or "catch-up to the Joneses" as discussed in Roussanov (2010) and Abel (1990).

This paper is organized as follows. Section 2 discusses the spirit of capitalism and related literature. Section 3 describes the data set used to test the spirit of capitalism models and establishes the economic heterogeneity among households that motivates us to steer away from U.S. aggregate data and towards data categorized by income quintiles. In Section 4 we employ two asset pricing models designed by Bakshi and Chen (1996) to test the spirit of capitalism. In Section 5 we examine household economic data sorted by income quintiles within a cointegrating framework. Cointegration techniques help diagnose whether the household data are consistent with the spirit of capitalism. Section 6 concludes the paper.

2. Literature review

Bakshi and Chen (1996) quantify the descriptive analysis of the spirit of capitalism discussed by Weber (1958) and Duesenberry (1962) by adapting the standard consumption-based asset pricing model to incorporate wealth and thereby measure the desire for social status. The authors find that households with a strong desire for social wealth status prefer wealth accumulation through reduced consumption, compared to those households with less concern for status. In other words, they find that households desire wealth for reasons beyond its ability to buy goods and services. By way of reason, this two-fold purpose for wealth exposes households to a two-fold set of risks, consumption risk as well as social status risk.

According to Roussanov (2010), the relative weight that a household places on these risks depends on its relative wealth in society. He shows that the least wealthy households are concerned more about their consumption risk than status risk. Roussanov (2010) adds insight into the spirit of capitalism by seeking to explain the relationship between social status, wealth, and diversification. His main goal is to explain the apparent lack of diversification of wealthy households, which are known to often hold substantial investments in non-traded entrepreneurial businesses. This observation suggests that as household wealth increases cross-sectionally, and social status

climbs accordingly, households are exposed to more idiosyncratic risky assets.

What drives wealthier households to hold more idiosyncratic risky assets? The answer to this question begins by recognizing that assets with substantial amounts of idiosyncratic risk are a lot like lottery tickets. If they pay off, households not only gain wealth, but leap-frog into a higher social status. Roussanov (2010) refers to this behavior as "getting ahead of the Joneses." Interestingly, "getting ahead of the Joneses" and the holding of idiosyncratic risky assets by the wealthy can be put into better context by a comparison to the "catching up of the Joneses" phenomenon of Abel (1990). In "catching up to the Joneses," households are heavily concerned about their own consumption falling behind the average household. This concern causes them to invest in portfolios that positively covary with the aggregate market and away from portfolios with high idiosyncratic risk.

According to Roussanov (2010), wealthier households, on the other hand, are more concerned with "getting ahead" than "catching up to" the Joneses. This leads wealthier households away from "herd behavior," and towards entrepreneurial and private equity investments with substantial idiosyncratic risk. These investments can have significant payoffs that are uncorrelated with the market and have the potential to allow a household to jump ahead of the Joneses.[3]

Our paper employs elements of both Bakshi and Chen (1996) and Roussanov (2010). We utilize the asset pricing models developed by the former and incorporate the cross-sectional wealth strata of the latter. The remainder of this section focuses on the asset models developed by Bakshi and Chen (1996) who extend the standard power utility consumption-based asset pricing model. We will focus on just two of their models.

In the first model, the investor obtains utility from an absolute level of wealth,

$$U(C_t, W_t) = \frac{C_t^{1-\gamma}}{1-\gamma} W_t^{-\lambda} \qquad (1)$$

where C_t denotes current consumption, W_t denotes current wealth of the agent, γ denotes the coefficient of relative risk aversion under standard power utility, and λ denotes degree to which the agent cares about absolute wealth. The fraction on the right-hand-side of the utility function is the standard constant relative risk aversion (CRRA) power utility component. The second component captures wealth so that the utility function is concave in wealth provided λ is positive. It can be shown that the Euler equation for Model 1 is,

$$1 = \beta E_t \left[\left(\frac{C_{t+1}}{C_t} \right)^{-\gamma} \left(\frac{W_{t+1}}{W_t} \right)^{-\lambda} \left(1 + \frac{\lambda}{\gamma-1} \frac{C_{t+1}}{W_{t+1}} \right) (1 + R_{t+1}) \right]. \qquad (2)$$

Notice that consumption growth and wealth growth are accounted for in the Euler equation along with the consumption-to-wealth ratio. R_{t+1} denotes the rate of return on the market. This Euler equation, and the ones to follow in this paper, are derived on the optimal path chosen by households for consumption (C_t^*) and wealth (W_t^*) as shown in Bakshi and Chen (1996),

$$1 = \beta E_t \left\{ \left(\frac{U_c(C_{t+1}^*, W_{t+1}^*, V_{t+1})}{U_c(C_t^*, W_t^*, V_t)} + \frac{U_w(C_{t+1}^*, W_{t+1}^*, V_{t+1})}{U_c(C_t^*, W_t^*, V_t)} \right) R_{i,t+1} \right\}. \qquad (3)$$

In the second model, households derive utility not just from current wealth, but from relative wealth. Here households jockey

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[3] Interestingly, Krasny (2011) develops a wealth-status model where low-status investors seek exposure to stocks with large idiosyncratic risk components in hopes of "hitting a home run" and jumping up in status. Krasny's model uses status to explain the empirical finding that stocks with high idiosyncratic risk historically underperform stocks with high covariances to the market. Status-seeking investors bid up the prices, and reduce the expected return, of high-idiosyncratic stocks.