Wealth effects on world private financial saving

Ray C. Fair [1]

Cowles Foundation, Department of Economics, Yale University, New Haven, CT 06520-8281, United States

ARTICLE INFO

ABSTRACT

This paper shows that about 70% of the variance of the yearly change in the world private financial saving rate can be explained by lagged changes in world stock and housing values for the sample period 1982–2013. A theory consistent with these results is that world asset-value changes affect world consumption and investment spending, which affects the world private financial saving rate.

© 2016 CEPII (Centre dEtudes Prospectives et dInformations Internationales), a center for research and expertise on the world economy. Published by Elsevier B.V. All rights reserved.

1. Introduction

Annual data on the world private financial saving rate, denoted sp_t^*, are constructed in this paper for the 1980–2013 period, a measurement that is new to this paper. It will be seen that there is a high negative correlation between changes in sp_t^* and lagged changes in world stock and housing values. Regression results show that about 70% of the variance of the change in sp_t^* can be explained by lagged changes in world stock and housing values for the sample period 1982–2013. A theory consistent with these results is that asset-value changes affect consumption and investment spending through wealth effects, which affects the private financial saving rate.

The regression results are consistent with much of the literature on wealth effects on household expenditures. Wealth effects on household expenditures have been part of my U.S. macroeconometric model since its inception—Fair (1976). Recent estimates from the model—reported in Fair (2016)—show that a sustained increase in household wealth (financial plus housing) leads to an increase in household expenditures of about 4–5% of the wealth increase per year. In other words, about 4-5 cents on the dollar.

This estimate is consistent with results from other approaches. The size of the wealth effect is discussed in Ludvigson and Steindel (1999), where they conclude (p. 30) that "a dollar increase in wealth likely leads to a three-to-four-cent increase in consumption in today's economy," although they argue that there is considerable uncertainty regarding this estimate. Their approach is simpler and less structural than using a macroeconometric model, but the size of their estimate is similar. Starr-McCluer (1998) uses survey data to examine the wealth effect, and she concludes that her results are broadly consistent with a modest wealth effect.

Mian et al. (2013) find 5–7% effects of housing wealth on consumption (p. 1723), although these effects vary considerably

across zip codes. Zhou and Carroll (2012) find 5% effects of housing wealth on consumption (p. 18). Case et al. (2012) test for asymmetrical effects and find that the housing wealth elasticity is estimated to be larger in falling markets than in rising markets. Their estimated elasticities are 0.10 and 0.032, respectively, in falling and rising markets. The elasticity of 0.10 in falling markets translates into roughly 4 cents on the dollar.

Finally, Chaney et al. (2012) find significant effects of real estate prices on corporate investment through a collateral channel. They estimate about 6 cents of investment for each dollar of collateral.

The next section discusses the construction of sp_t^* and how it relates to the literature. Section 3 discusses the data collection and examines plots of the data. In Section 4 reduced form regressions are run explaining sp_t^*. Theoretical issues are discussed in Section 5. Section 6 concludes the paper.

2. The construction of sp_t^* and related literature

Country *i*'s current account, denoted S_{it}, is its financial saving vis á vis the rest of the world. If its current account is in surplus, there is an increase in its net foreign assets, and conversely if its current account is in deficit. The sum of the current accounts of all countries in the world is zero after converting the current accounts to a common currency. The financial saving of a country's government, denoted SG_{it}, is total government revenue minus total government expense. If a government's financial saving is positive, there is an increase in the government's net financial assets, and conversely if the government's financial saving is negative. The financial saving of a country's private sector, denoted SP_{it}, is $S_{it} - SG_{it}$. Because the sum of S_{it} across all countries is zero after converting to a common currency, the sum of SP_{it} is equal to minus the sum of SG_{it} after converting each to a common currency. If the sum of SP_{it} after converting to a common currency is positive, this means there is a net flow of funds from the world's private sector to the world's government sector, and conversely if the sum is negative. sp_t^* is the sum of SP_{it} divided by world GDP, where all variables are converted to U.S. dollars.

This paper is concerned with *financial* saving—flows of funds among sectors and countries. Financial saving does not distinguish between consumption and investment expenditures. The financial saving of a sector or country is total revenue minus total expenditures, including expenditures that are classified in the national income and product accounts as investment expenditures.[2] Consider the GDP definition for a country, $Y_{it} = C_{it} + I_{it} + G_{it} + EX_{it} - IM_{it}$, where Y_{it} is GDP, C_{it} is consumption, I_{it} is investment, G_{it} is government spending, EX_{it} is the level of exports, and IM_{it} is the level of imports. S_{it} as used in this paper is $Y_{it} - C_{it} - I_{it} - G_{it}$, namely the country's current account, $EX_{it} - IM_{it}$. A country's saving, on the other hand, which will be denoted SAV_{it}, is $Y_{it} - C_{it} - G_{it}$, so $S_{it} = SAV_{it} - I_{it}$. In this paper SAV_{it} will be called "saving," and S_{it}, SP_{it}, and SG_{it} will be called "financial saving."

Much of the literature on saving behavior is concerned with SAV_{it}. It is important to realize that a country's current account, S_{it}, can be large relative to its GDP even though it has a low saving rate (because I_{it} is small). If one is talking about which countries are financing, say, a large U.S. current account deficit, it is not necessarily countries with high saving rates. By definition all current account deficits are financed by current account surpluses (because the sum of S_{it} across countries is zero), but this in itself says nothing about which countries have high saving rates and which have low saving rates.

It is useful to see how this paper relates to the literature on saving gluts. Bernanke (2005) in a well known speech discussed the possibility of a global saving glut in the early 2000 s, and econometric studies—for example, Chinn and Ito (2007) and Gruber and Kamin (2007)—examining this theory followed. In the econometric work current account balances for a number of countries are regressed on a variety of variables. To the extent that the right hand side variables are exogenous, these regressions can be considered reduced form regressions. An issue with this work, however, is that there cannot be a global saving glut regarding current account balances, since they sum to zero across countries, a fact this paper uses in the construction of sp_t^*. It is thus not clear what to make of the regression results regarding a possible global saving glut. Bernanke's speech is in fact not really concerned with a global saving glut, but with the large U.S. current account deficit. He discusses a number of possible reasons for the large U.S. deficit and for the surpluses of some other countries. None of this discussion requires the concept of a global saving glut.

Obstfeld (2010) focuses on current account deficits and surpluses leading up to the world economic slowdown in 2008–2009—what he calls "current account imbalances." He discusses possible connections between the imbalances and the U.S. financial crisis, and he argues that there is no simple cause and effect story. Again, this paper is not concerned with current account imbalances, which sum to zero across all countries. Instead, the world is divided into two sectors—private and government—and the financial saving of the world's private sector is examined, not the financial flows among countries.

There is an interesting literature showing that after taking into account capital gains and losses on net foreign assets, the change in a country's net foreign assets can be quite different from the country's current account—see, for example, Gourinchas and Rey (2007) and Obstfeld (2010). The financial flow data used in this paper do not include capital gains and losses, so these valuation issues are not taken into account.

There is finally a literature explaining the private saving of various countries, both across time and across countries—see, for example, Maason et al. (1998) and Loayza et al. (2000). This latter reference provides a good summary of previous work.

---

[2] The difference between consumption and investment expenditures in national income and product accounts is, of course, somewhat arbitrary. For example, consumer durable expenditures and clothing expenditures have an investment component to them, as do educational expenditures.