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Globalization and Household Saving: Is There a Link?

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This paper proposes that globalization can affect household saving in the long run in a number of ways. Social interactions between different cultures can induce value changes, which can result in shifts in consumption and saving behavior. International trade allows consumers to have easier access to status goods, stimulating consumption and dampening saving. Extending from Veblen's conspicuous consumption theory, saving may also decrease when globalization leads to greater population mobility and fosters urbanization, thus enhancing the importance of consumption as a way to display wealth. In addition, financial globalization reduces credit constraints and allows households to save less. Using cross-country data from the United Nations, the OECD, and other sources, this paper finds evidence that household saving declines as globalization deepens, especially in the social and cultural dimensions.

Keywords: household saving, globalization, conspicuous consumption, culture

JEL classification: E21 F69

I. Introduction

As the ultimate financing source of capital investment, saving is a determinant of long-term productivity and economic growth. With today's unprecedented international financial mobility, imbalances between saving and investment can also contribute to economic fluctuations. It is widely believed that a culprit of the 2007-08 global financial turmoil is the global trade imbalances, which reflect vast differences in national saving. However, recognition of the global imbalances has not brought sufficient policy attention to domestic imbalances.

The focus of this paper is household saving, an important component of national saving, which also exhibits wide disparity across countries. For example, average gross household saving rates are 33.0% and 15.8% for China and Japan, respectively, and 6.5% and 7.8% for the U.K. and U.S., respectively,² and average net household saving rate³ is

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² Calculated from the United Nations' National Accounts Official Country Data for the available years up to 2011.

³ The difference between gross and net saving rates is defined later.

13.7% for South Korea, 12.3% for Belgium, 3.9% for Norway, and 2.6% for Ireland.⁴ However, this paper finds evidence that as globalization deepens (especially in the social and cultural dimensions), household saving declines, especially for high income economies. The lower household saving has various implications in areas such as current account balance, the effectiveness of fiscal and monetary policies, and the importance of financing capital spending through alternative sources, for example, corporate saving.

The paper contributes to the existing literature on household saving by incorporating social and cultural considerations and extending to the impact of globalization. Despite the rapid pace of globalization in the last several decades, the connections between household saving and globalization have been overlooked by existing literature. Cultural and social factors have also been generally neglected in existing literature on household saving. However, as concluded in studies in other fields (Kim et al. 2002; Overby, Gardial, and Woodruff 2004), consumer behavior is influenced by consumer values and differs in different cultures.

This paper proposes that globalization in the social and cultural dimensions may lead to changes in values and lifestyles through information flows, trade in cultural products, personal interactions with different cultures, etc. Extending from the view of consumers as identity seekers in the marketing field, globalization in the economic dimension (international trade and capital flows) may encourage consumption and dampen saving by fostering interactions with different cultures and providing access to a greater variety of products, particularly those that can enhance one's social status. In addition, globalization may also lower saving since it encourages population mobility and urbanization, which, according to Veblen ([1899] 2007), stimulate conspicuous consumption.

The paper is organized as follows. Section II briefly reviews the determinants of household saving considered in the existing literature and elaborates the reasons to consider globalization as a factor affecting household saving. Section III discusses preliminary evidence from the data. Section IV presents an empirical model, the processing of the data, and the results of specification tests. Section V contains the estimation results. Conclusions are in section VI.

II. Determinants of household saving

An extensive empirical literature exists on household and private saving, either as cross country analyses or as studies of individual countries, using household survey data or aggregate data. Examples are Bosworth (1990), Smith (2001), Cohn and Kolluri (2003), Jongwanich (2010), and the papers associated with the World Bank's project "Saving Across the World: Puzzles and Policies."⁵ Common determinants of household saving considered include those related to the life cycle theory, the permanent income theory, the precautionary motive of saving, and the intergenerational transfer motive of saving.

The life cycle theory assumes that households save (or borrow) to smooth consumption, and saving changes with age. Thus, the demographic structure and other factors affecting the decision in consumption smoothing, such as the real interest rate and

⁴ Calculated from net saving rates data from the OECD online database. As discussed later, saving rates in both Japan and South Korea declined drastically in recent years.

⁵ See Loayza, Schmidt-Hebbel, and Servén (2000) for a review.

credit constraints, all affect household saving. Higher young and old-age dependency ratios are generally considered to have negative effects on saving with a greater portion of the population excluded from the labor force, although Conroy (1979) argues that the old age dependency ratio can increase the incentive to save due to increased longevity. The effect of real interest rate on saving is ambiguous because of the opposing forces of the income effect and the substitution effect. As of credit constraint, increased ability to borrow reduces the need to save; on the other hand, financial development may encourage saving by providing more channels to save, according to Smith (2001) and Chinn and Ito (2007).

In addition, the wealth effect of capital gains from assets holding allows households to reduce saving, as concluded in the study by Juster et al. (2006). Households may also “pierce the corporate veil” and modify their saving in response to changes in corporate saving. As an example, in a paper by Callen and Thimann (1997), household saving is found partially offset by corporate saving. Similarly, fiscal deficit increase can cause forward-looking households to increase saving, according to the Ricardian equivalence theory, with the assumption that households smooth consumption based on their life time income. The competitive saving motive proposed by Wei and Zhang (2011), which can be considered as an extension of the life cycle theory, incentivizes parents to save more for their sons, thus the male to female ratio of the young generation (12–21 year-old) may also affect household saving.

The permanent income hypothesis also assumes consumption smoothing and that consumption depends on life-time income. It follows that saving increases with a temporary income increase. Lagged income may also affect consumption and saving as households slowly adjusts to changes in income. Income growth affects saving in both of the permanent income theory and life cycle theory; however, the effect can be ambiguous. Higher income growth may reduce saving rate if it generates expectations of higher future income growth, particularly when initial wealth is low (Carroll and Weil 1994). On the other hand, when higher growth benefits young income earners more, who save more than the old according to the life cycle theory, it can generate more saving, although the effect is small, according to Deaton and Paxson (1997). Terms of trade has also been considered as a factor affecting household saving, although the effect is ambiguous depending on whether the change is considered as temporary or permanent, according to Ostry and Reinhart (1992); and when it is temporary, it also depends on the opposing effects of consumption smoothing and tilting and the elasticity of substitution between tradables and non-tradables.

The precautionary motive of saving suggests that greater uncertainty promotes saving. Thus, the social security system, inflation (may indicate uncertainty), and the urbanization ratio (urban households have lower income fluctuations than rural households) are also considered by the empirical literature. Note that the effect of the social security system can also be reasoned using the life cycle theory, which predicts lower saving rate with a better system by reducing the need to save. However, arguments exist that social security may have no effect due to reasons such as induced retirement, increased taxes to finance it, etc. (Koskela and Virén 1983). Not widely used in formal econometric analysis, female labor participation can also discourage saving through reduced uncertainty in household income, as suggested by Attanasio, Banks, and Bertola (1998).

The intergenerational transfer motive of saving suggests higher income inequality is associated with more aggregate household saving if bequest is a luxury good so that the wealthy saves more than the poor. Income inequality may also contribute to saving if households face borrowing constraints, which pressures the poor to save more to smooth consumption. On the other hand, higher income inequality may depress saving if it induces relative consumption, causes social tension, or elevates uncertainty of investment.⁶

As demonstrated in the above summary, the standard determinants are often theoretically ambiguous and empirically disputable. Household saving decision is a complex issue that has not yet been understood conclusively. New determinants are worth exploring by examining alternative theories.

Although alternative consumption theories exist, they are largely neglected by mainstream economics. As criticized by Schor (1995 and 2007), mainstream economics rejects the difference between consumption needs and wants, and alternative theories are worth revisiting. As pointed out by Robinson (1965), “[t]here are two ways of satisfying desires: one is to get more and the other to want less.” Trigg (2001) also points out that standard consumption theories assume that consumers’ utility is based on exogenous preferences, which do not depend on social interactions between consumers. Dutt (2001) argues that happiness may not always be derived from consumption; and consumption may increase happiness in comparison with other individuals’ consumption levels, with achieving a higher status as the most important explanation.

An important alternative consumption theory is Veblen’s conspicuous consumption theory, in which signaling status through wealth display is a core idea. Consumption, along with leisure activities, is a way to display wealth and hence social status. As a society becomes more mobile and leisure is more difficult to observe, individuals will rely more on consumption to display wealth, often resulting in wasteful consumption. In larger communities, such as urban areas, conspicuous consumption is more prevalent than in smaller communities and rural areas, because there are more spectators in larger communities, especially transient spectators. Veblen’s theory of conspicuous consumption has been further elaborated by some recent researchers such as Bagwell and Bernheim (1996), Dutt (2001), Trigg (2001), and Schor (2007).

In contrast to the economics field, the literature in marketing generally recognizes consumers as identity seekers, who construct “individual and collective identities” through transformation of symbolic meanings embedded in the products they consume (Arnould and Thompson 2005). In addition, businesses have embraced the idea that culture plays an indispensable role in consumption and incorporated it to marketing and management.

As summarized by Ralston et al. (1993), culture can be defined as “beliefs and values that are widely shared in a specific society at a particular point in time,” and may change over time. The Eastern and Western cultures are often the subject of cultural comparison. While the Western cultures (dominated by the Judeo-Christian tradition) emphasize individualism, the Eastern cultures (mainly influenced by Confucianism, Buddhism, and Taoism) value collectivism (Ralston et al. 1997; Dutt 2001). As noted in Yuan, Song, and Kim (2011), cultural values are considered central to shaping consumers’

⁶ See more about the effect of income inequality on household saving in Blinder (1975), Kotlikoff and Summers (1981), Schmidt-Hebbel and Servén (2000), and Alvarez-Cuadrado and Vilalta (2012).

needs and lifestyles. Their studies demonstrate that consumer values differ in East Asia and East Europe. Generalized from these ideas, between other regions and within each region, cultures and their influences on consumer behavior are not homogeneous because each society differs in history, socioeconomic environment, practices in religions, etc.

Drawing on the above literature, the rest of the paper argues that globalization affects saving in a number of ways on the premise that consumption and saving are influenced by cultural values. First, globalization in the social and cultural dimensions can induce cultural changes through increased interactions between different cultures.⁷ An important channel of cultural interactions is international trade of cultural products (such as movies and music). Cultural products convey information about values relatively directly and explicitly and are often easily accessible to the general public. Extensive consumption of such cultural products may invoke appreciation of the source cultures and induce changes in values and lifestyles. Given that the West (especially the U.S.) possesses a comparative advantage in the industries producing these cultural products, it can be conjectured that the overall global influence of Western culture outweighs that of other cultures. As casual evidence, American movies, music, and fast food chains (Kentucky Fried Chicken, McDonald's, etc., and more recently Starbucks) quickly gained popularity in China shortly after it opened to trade, even though diet and many other cultural elements are traditionally very different in China. In the U.S., no such comparable influence from China can be observed during the same period, when imports from China also shot up. And Chinese restaurants in the U.S., although increased rapidly in recent years (like many other ethnic restaurants), continue to offer a modified version of Chinese food to cater to American taste. Further, the West, represented and led by the U.S., has been viewed as a culture of consumption in countless studies.⁸ Thus, even though it is not well documented in terms of how and to what extent cultural interactions affect saving, if the main exporters of cultural products do not value saving, it can be surmised that the overall effect of cultural interactions on saving during the globalization process is likely negative.

Second, globalization can lead to a greater Veblen effect if it results in: 1) a more mobile population, 2) a higher level of urbanization, and 3) more status goods. One dimension of globalization is increased interactions with individuals of other cultures through international tourism and labor migration.⁹ Economic globalization also fosters urbanization through increasing the returns to urban proximity (Glaeser 2009), which in turn increases population mobility. This phenomenon has been widely observed around the world, such as in East Asia (Candau and Dienesch 2013). Further, status goods (goods perceived by consumers to have the function of projecting social status), such as iPhones, luxury cars, brand clothing and accessories, etc., become more available as an economy becomes more open. All these will generate more conspicuous consumption and dampen saving.

Finally, financial globalization may also alleviate credit constraints and indirectly allow households to save less when financial institutions borrow from other economies

⁷ This point is related to the debate in the management literature of convergence versus divergence in managerial values in the industrialized world with different initial cultures (see a review in Ralston et al. 1993).

⁸ See, for example, Fox and Lears (1983).

⁹ See Castles (2000) for essays on globalization and migration.

and extend more credits to households. This is similar to the logic that the high saving of the Asian economies is a source of the mortgage crisis in the U.S. in 2007. Overall, the above analysis suggests that households saving may decline as a result of globalization. The next section presents a summary of global household saving across region and time and presents some preliminary evidence.

III. Household Saving Data

The United Nations (UN) National Accounts Official Country Data contains harmonized data on the sources and uses of income over time. Following the definition in the System of National Accounts (SNA) by the UN (2009), net saving rate is derived by calculating households' net saving (gross saving adjusted for depreciation, or consumption of fixed capital) as a portion of adjusted disposable income (that is, adjusted for the change in net equity of households on pension funds) with consumption of fixed capital deducted. Countries with unusually large positive saving (Qatar, higher than 40%) or large negative saving rates for unknown reasons (lower than negative 20%) are dropped, which are clearly outliers.¹⁰ The resulting net saving rate data includes 45 economies between 1975 and 2011, in total 727 observations.

Net household saving rate data from 1970 to 2011 is also obtained from the OECD online database. It is consistent with the SNA framework, and provides data for 8 additional economies. The correlation coefficient between the reported net saving rates in the OECD dataset and those calculated from the UN dataset is 0.989 for those available in both datasets. The following analysis will combine net saving rates from both datasets. For the economies with data available in both, the data with longer coverages is used.

Figure 1 shows the net saving rates by region and income.¹¹ By region, average saving rates in East Asia and the Middle East-North Africa region far exceed other regions. East and Central Europe has the lowest saving rate, followed by Sub-Saharan Africa. By income, households in high and upper middle income economies save more than households in low and lower middle income economies.

In spite of achieving the highest average saving rate, the high-income economies exhibited a clear downward trend in saving (Figure 2). The decline is especially sharp for some economies with high saving previously, such as Japan (from 16.1% before 1990 to 2.1% after 2000), South Korea (from 15.7 to 4.6%), Australia (from 14.9% to 4.1%), and Canada (from 14.0% to 3.7%). This trend is also observed by previous researchers, such as Bosworth (1990) for industrial countries, Cohn and Kolluri (2003) for the G-7 countries, and by Loayza, Schmidt-Hebbel, and Servén (2000) for the world's median gross national saving rate. In contrast, saving in other income groups does not exhibit a clear trend, although this may be affected by poor data availability, since little data is available before 1990 for these economies. As far as the available data is concerned, the relatively sharper decline in saving for the economies with initial higher saving rates may indicate a trend of less diverse saving behavior.

The decline in household saving for the high-income economies coincides with their higher social and economic globalization levels (Figure 2), measured by the 2014

¹⁰ They include Kuwait, Armenia, Azerbaijan, Bulgaria, Romania, Kazakhstan, Kyrgyz Republic and Serbia.

¹¹ Classification of income follows the World Bank's classification in July 1, 2014.

KOF index, which is constructed by Dreher (2006) and updated by Dreher, Gaston, and Martens (2008). On a 0-100 scale, the index covers economic, social, and political dimensions, with a higher value representing a higher degree of globalization. The social globalization index consists of 3 components: information flows (weighted 35%), personal contact (33%), and cultural proximity (32%). The personal contact sub-index measures direct international interactions among people and is mainly based on international tourism, international telephone traffic, international letters sent and received, and foreign population. The sub-index for information flows combines data on internet hosts and users, cable television subscribers, trade in newspapers, etc. Although it does not directly capture the volume of international information flows, it represents the potential spread of ideas and information across the border, as explained by Dreher, Gaston, and Martens (2008). The cultural proximity sub-index is constructed from the numbers of McDonald's and Ikea per capita (weighted 45% each) and trade in books. This indicator seems to measure globalization in the cultural dimension more directly, but given the relative narrow coverage and the high correlation with the overall social globalization index (0.90), in the following analysis, the social globalization index is used to represent globalization in both the social and cultural dimensions.

The economic globalization index includes two components: actual international economic flows (weighted 50%) and indicators representing restrictions on these flows (50%). Actual international economic flows include GDP-adjusted volumes of trade (the sum of exports and imports), foreign direct investment (sum of gross inflows and outflows), and portfolio investment (also in both directions), and factor income payments to foreign employees and capital. The sub-index for international trade and investment restrictions is constructed from invisible import barriers, tariffs, taxes on trade, and a capital control index. Similar to globalization in the social aspect, globalization in the economic dimension generally progressed rapidly for the high income group, although the economic globalization index is naturally more likely to be affected by short run business cycles. Since the 1970s, the degree of integration measured by both indices for the high income group far exceeded that for other income groups.

The negative correlation between saving and the degree of globalization is further shown in the top panes of Figure 3. In fact, the aforementioned economies with high initial saving rates and sharp declines subsequently either have high levels of social globalization (89 for Canada and 82 for Australia) or unusually rapid progress in social globalization (from 22 to 52 for South Korea between 1970 and 2011 and from 26 to 67 for Japan). The figure also shows that the globalization indices are negatively correlated with deviations from the cross-sectional means of net saving rates (bottom panes). A possible explanation is that as globalization progresses and interactions between different cultures advance, consumer values may converge, narrowing the gaps in household saving.

IV. The Model

Household consumption and saving behavior exhibits habitual persistence. Such persistence may be due to difficulty in adjusting consumption in the short run or persistent influence of observable factors such as income (consistent with the permanent income theory). It may also arise from unobservable or unmeasurable factors, such as

values. For these reasons, the following autoregressive distributed lag model (ARDL) is considered.

$$s_{it} = \mu_i + \delta_i s_{i,t-1} + \sum_{j=0}^1 \theta'_{ij} X_{i,t-j} + \varepsilon_{it} \quad (1)$$

In the equation, s is household saving rate, X is the vector of explanatory variables, μ is the panel specific effect, ε the error term; i and t denote country and time, respectively. Only one lag is considered for the regressand and the explanatory variables because of the short time dimension (T) for most of the economies.

The vector of explanatory variables X starts with a full set of variables as considered in sections II and III. They include the KOF index of social or economic globalization,¹² GDP per capita (at constant 2005 US dollars; logarized), GDP growth rate, fiscal balance as a percent of GDP (to account for the effect of fiscal policy hypothesized in the Ricardian equivalence theory), real interest rate, an index measuring regulations on private sector credit (to represent private credit availability), the young and old age dependency ratios, life expectancy at birth, logarized consumer price index (with a common base year 2005; substituted with GDP deflator if not available) and terms of trade (with a common base year 2005), the urbanization ratio (urban population as percentage of total population), female labor participation rate, income inequality (measured by the Gini coefficient), public social spending as a percent of GDP (public spending on old age, healthcare, etc.), net corporate saving as a percent of national income for the “corporate veil hypothesis”, per capita household financial assets (at constant 2005 US dollars; logarized) to represent the wealth effect of gains from financial assets holding, and the young-age sex ratio (male to female ratio of the population between the ages of 7 and 21).

Most variables are obtained, or calculated using data, from the World Bank’s World Development Indicator database (WDI) and the OECD with a few exceptions. The regulation index on private credit is obtained from the Economic Freedom of the World Data (Gwartney, Lawson, and Hall 2012). Real interest rates are represented by real money market rates (treasury bills rates or discount rates if unavailable), calculated from the International Monetary Fund’s International Financial Statistics. The primary sources for the Gini coefficient is the Luxembourg Income Study and the OECD. If unavailable, the values from WDI database are incorporated. Similar to the treatment by Wei and Zhang (2011), the young-age gender ratio for the population of ages 7–21 is the gender ratio for those aged 0–14 in the 7th year preceding the relevant year. Corporate saving rate data is obtained from the World Wealth and Income Database (WID), which also provides supplemental data for fiscal balance when data coverage from the primary sources is short or unavailable. Some variables are only available every several years (the Gini coefficient, the urbanization ratio, and the regulation index on private credit); the missing values are linearly interpolated between available years. Detailed descriptions and the sources of the data are listed in Table 1 in the Appendix.

Because data for corporate saving, household financial asset ratio, and public social spending are unavailable for most economies, when these variables are included,

¹² Although religion, race, language, and other time-invariant social and cultural indicators may serve as proxies for cultural proximity, they do not adequately capture the impact of globalization over a span of several decades, and also cannot be included in fixed effects models with the lack of variation over time.

the sample is limited to 13 OECD economies, which are predominantly high income economies. As such, two rounds of model selection are employed: one with these three variables, the resulting model referred to as the small sample model; the other with the three variables excluded, the resulting model the large sample model. Because of the high correlation between the social and economic globalization indices (the correlation coefficient is 0.84), only social globalization is included in the regressions for model selection and specification tests.

First, using the Schwarz Bayesian information criterion (BIC) with the full variable set considered, the explanatory variable set X is reduced to a four-variable set: the globalization index, fiscal balance, corporate saving, and household financial assets; their lagged levels also remain. The sample for this small sample model includes 13 panels and 234 observations (with all but one being high income economies), and all 12 high income panels (with 226 observation) are long enough to be included in the regressions using the MG and PMG estimators, which require that regressions can run for each individual panel. A second round of model selection with corporate saving rate, household financial assets, and public social spending excluded results in the large sample model, which includes in X the globalization index, fiscal balance, life expectancy, GDP per capita, and the lagged levels of the latter three variables. There are 42 panels and 784 observations in the large sample model, with 39 panels remaining for the MG and PMG estimators. The economies included in the two models are listed in Table 2 in the Appendix.

To extract the long run effect of globalization on households' saving behavior, the above ARDL model can be transformed to the following for an error correction approach.

$$\Delta s_{it} = \mu_i + \varphi_i (s_{i,t-1} - \beta'_i X_{i,t-1}) + \theta'_{i0} \Delta X_{it} + \varepsilon_{it} \quad (2)$$

Here, $\varphi_i = -(1 - \delta_i)$. The long run parameter for the k th explanatory variable is $\beta_{ki} = -\theta_{ki,0}/\varphi_i = \theta_{ki,0}/(1 - \delta_i)$ if only the contemporary variable is included, and $\beta_{ki} = -(\theta_{ki,0} + \theta_{ki,1})/\varphi_i = (\theta_{ki,0} + \theta_{ki,1})/(1 - \delta_i)$ if the lagged variable is also included.

With fixed effect regressions in the original ARDL form, specification tests are conducted for panels with at least 10 observations of saving rate. First, Ramsey's RESET test for functional form is run for each individual panel. The functional form appears to be appropriate for most panels, except for one in the small sample model (Australia) at the 1% level, and one additional panel (Sweden) and three in the large sample (Japan, the Netherlands, and Poland) at the 5% level.

Second, several tests are considered for cross sectional independence. The Breusch-Pagan Lagrange multiplier test is suitable when the number of panels N is smaller than the time dimension T , which is the case of the small sample model when the short panel Mexico is excluded (N is 12, T is between 16 and 41). With a p -value 0.754, the test failed to reject the null of cross-sectional independence. When N is greater than T , the case of the large sample model, cross sectional independence tests may be conducted using the three tests (Pesaran, Frees, and Friedman) summarized by De Hoyos and Sarafidis (2006). As they pointed out, Pesaran's test is preferred for dynamic panel models, but requires each panel's time dimension to be more than the number of regressors at least by one. With a test of the 40 panels meeting the requirement (T is

between 10 and 40 with an average of T_i 19.3), Pesaran's test yields a p -value 0.231. Again, no evidence of cross-sectional dependence is found.

However, strong evidence is found that panel level heteroskedasticity is present in both of the small and large sample cases using the likelihood ratio test with auxiliary generalized least squares regressions. Wooldridge's test for autocorrelation for panel data also indicates there is first order serial correlation for both of the small and large sample models. However, individual tests using the Breusch–Godfrey test for small samples rejected the null of no first order serial correlation for only two panels (the U.K. and Sweden) in the small sample model and four panels (Chile, Czech, Estonia, and Sweden) in the large sample model at the 5% level, and none at the 1% level.

Panel unit root tests are carried out using the Phillips-Perron test, which has the flexibility of handling unbalanced panels with serial correlation and heteroskedasticity. According to the inverse Normal z statistic values, both tests rejected the null that all panels contain unit roots at the 1% level for all variables except for household saving rate and household financial assets in the small sample's case, and life expectancy and GDP per capita in the large sample's case. The null is strongly rejected for the first-differenced data of these variables. Thus, these variables can be treated as following I(1) processes, and all others I(0).

Westerlund's cointegration test (Persyn and Westerlund 2008) with one lag is conducted between the I(1) variables; i.e., between household saving rate and financial assets in the small sample's case, and between life expectancy and GDP per capita in the large sample's case. Three of the four tests (G_τ , P_τ and P_α) strongly rejected the null of no cointegration in both cases, all with a p -value 0.000.

Since household financial assets in the small sample model and GDP per capita in the large sample model may be endogenous to saving, the Davidson and MacKinnon (1993) test of exogeneity (programed by Baum and Stillman 2003) is conducted for these two variables. With lagged GDP growth, inflation, real interest rate, the age dependency ratios, the private sector credit index, and female labor participation rate as instruments, the p -value of the F statistics is 0.180 for the test of exogeneity for household financial assets, and is 0.727 for GDP per capita. Thus, the tests did not detect problems of treating them as exogenous variables.

V. Estimation Results

Three estimators are considered, each with its own advantages and disadvantages (Pesaran, Shin, and Smith 1999; Blackburne and Frank 2007): (i) the within or fixed effect estimator, which assumes common long run and short run coefficients across the panels; (ii) the pooled mean group (PMG) estimator, which assumes common long run coefficients only; and (iii), the mean grouped (MG) estimator, which is the average of individual regression coefficients. By allowing for different long run and short run coefficients, the MG estimator is consistent and accommodates slope heterogeneity across panels, but can suffer from the drawback of low efficiency. The within estimator is consistent for data with large T 's, but imposes a strong constraint on the coefficients, and is biased and inconsistent for short T 's due to the dynamic nature of the model. The PMG estimator is more flexible than the within estimator in accommodating cross-section heterogeneity by allowing for differences in the short run and is more efficient than the MG estimator, although it can be inconsistent if the constraint of common long-run

coefficient is wrongly imposed. An additional advantage of the PMG estimator is its robustness to outliers and lag orders of the variables (Pesaran, Shin, and Smith 1999).

Estimation results of the long run coefficients using the three estimators are reported in the Appendix. Given that the data is independent across panels but exhibits panel-level heteroskedasticity and within-panel serial correlation, robust standard errors (clustering on country) are used for all regressions with the within estimator. When using the MG and PMG estimators, which require individual regressions for each panel, only those with panel length T_i longer than 10 are included in the regressions. After each regression using the within or PMG estimators, the Hausman test is run to check if there are systematic differences in the regression results from those using the MG estimator. With generally large p -values, no systematic coefficient differences are detected in all regressions.

In the small sample model, when both the social and economic globalization indexes are included, the long run parameter for the social globalization index is negative and highly significant in two regressions (the PMG and within estimators, Table 3), but it is significant with the wrong sign for the economic globalization index in one regression (the within estimator). Given the high correlation between the globalization indexes, which may cause collinearity, regressions are run with the indexes included separately. The long run coefficient for the social globalization index is also negative and significant with the MG estimator, and the coefficient for the economic globalization index is no longer significant. The estimation inconsistency across regressions confirms the likely problem of collinearity, and thus, including the globalization indexes separately is preferred.

In the large sample, the explanatory variables include life expectancy and GDP deflator, which are both highly correlated with the globalization indexes, especially the social globalization index. The correlation coefficient is 0.83 between social globalization and GDP per capita and 0.79 between social globalization and life expectancy. The estimations for the globalization indexes are again contradictory across regressions (Table 4, top half). While the coefficient for the economic globalization index is positive in the regression with the PMG estimator (column (8)), in the same regressions for the high and lower income economies separately, it is negative and significant for both groups (not shown in the table), further confirming the contradiction of the estimations with these variables all in the same regression. For this reason, regressions are also run using the variables selected without these two variables (bottom half of Table 4), in which case GDP growth should be added to the model according to BIC. When the globalization indexes are included separately, the long run coefficient for the social globalization index is negative and significant in all regressions (in most regression even with GDP per capita and life expectancy present), while only one estimate for the economic globalization index has such features (column (9), without GDP per capita and life expectancy).

During financial crises, households often respond by tightening consumption and bumping up saving due to increased uncertainty and credit crunch. Two dummies representing the Asian financial crisis and the recent global financial crisis are created, one for the years 1997–1998 and 2007–2009, respectively, and zero otherwise. The estimates for the dummies are not significant in most regressions and exhibit some inconsistencies. The long run coefficients for other variables in the regressions with the

dummies are in Table 5. Again, the long run coefficient for the social globalization index is negative and significant in half of the regressions, but estimations for the economic globalization index are inconsistent.

As an alternative to the BIC model selection, the Akaike information criterion (AIC) is also applied, resulting in more explanatory variables remaining in both the small sample and large sample cases. In the small sample case, the explanatory variables include 10 variables in addition to the lagged dependent variable and the globalization indexes, among which the old dependency ratio, GDP per capita, and life expectancy are all highly correlated with the globalization indexes, especially the social globalization index.¹³ The long run coefficients for both globalization indexes are insignificant, although it is negative and the p -values are relatively low for the social globalization index. To alleviate the issue of multicollinearity, separate model selections are conducted using AIC with some or all of the three variables excluded. The results are reported in Table 6. Columns (1)–(3) are the results from the model selection without GDP per capita; columns (4)–(6) without GDP per capita and life expectancy; and columns (7)–(9) also without the old dependency ratio. Because of the large numbers of parameters, regressions using the MG and PMG estimators can no longer run with the variables in regressions (1)–(6); and only 3 panels remain (Australia, Canada and the U.S.) in regressions (8)–(9) and (11)–(12). The long run coefficient for the social globalization index is negative and significant, at least at the 10% level in 7 of the 8 regressions. Most of the estimates for the economic globalization index are not significant, and the two significant estimates contradict each other.

Table 7 reports the results for the large sample model selected using AIC, where the first three regressions are the results from the model selection without GDP per capita. The variables in regressions (4)–(6) are the results without life expectancy, GDP per capita, and the age dependency ratios.¹⁴ With more explanatory variables remaining in the regressions, individual panel lengths and the numbers of panels included in the regressions with the MG and PMG estimators are also greatly reduced. Nevertheless, the long run coefficients are again consistent with those in the models generated using the BIC. Most of the coefficient estimates for the social globalization index are negative and significant, while only two for the economic globalization index are marginally significant.

Although the Hausman test indicates that the constraints of common long run and short run coefficients are acceptable, separate regressions are run for the high-income group and all other income groups to detect possible inconsistency of slopes. This is done in the large sample model, as all panels in the small sample model, except for Mexico (which has a short length), are high income economies. Results are presented in Table 8 (for high income economies) and Table 9 (for other income groups). Relatively strong evidence of the effect of globalization, especially measured by the social globalization index, is captured for the high income economies using the variables selected under both BIC and AIC, but only one estimate of the globalization indexes is negative and significant for other income groups (Table 9, economic globalization in regression (11)), and the magnitude is quite small.

¹³ The correlation coefficient between the social globalization index and the old dependency ratio is 0.82.

¹⁴ With a correlation coefficient 0.81, the young dependency ratio is also highly correlated with the social globalization index.

The long run coefficient estimates for other variables are generally consistent across regressions with a few exceptions. The coefficient for fiscal balance in most of the regressions shows that increased fiscal deficits prompt households to save more, supporting the Ricardian equivalency theory. Corporate saving also exhibits a strong negative effect on household saving, as does public social spending, as expected. The effect of household financial assets is often undetectable, similar to GDP per capita and the young age sex ratio. The estimates for GDP growth appear to be contradictory across recessions; however, in the small sample model selected by the AIC, which has more explanatory variables and is less likely to suffer from omitted variable bias, they are generally positive and often significant (Table 6). In the large sample model, the coefficient for GDP growth is also positive when it is significant for the high economies (Table 8), but often negative for the low economies or for the pooled data (Tables 7 and 9). Since the small sample model includes OECD economies only, which are mostly high income economies with relatively more stable growth, it is possible that income resulted from higher growth is more likely to be viewed as temporary income in high income economies, whereas higher growth is more likely to lift expectations for higher future income in lower income economies. Income generated from improvement in terms of trade may also be viewed as temporary income in high income economies (Table 6, regressions (9) and (12)).

The coefficients for the Gini coefficient and the private credit index also have opposite signs for the high and lower income economics. The coefficient of the Gini coefficient suggests a stronger effect of relative consumption in a less egalitarian society with lower income per capita. And the coefficient for the private credit index provides some evidence that credit availability is more likely to reduce household saving in a lower income economy, perhaps because of greater credit constraint. The results on life expectancy indicate that household saving rate is lower with longevity, consistent with the life cycle theory. However, the age dependency ratio is not significant, which may be contributed by its high correlation with the globalization index and life expectancy.

VI. Conclusion

This paper acknowledges the role of social and cultural factors in consumption and saving and provides evidence of a link between globalization and household saving, drawing on alternative theories on consumption, specifically Veblen's theory of conspicuous consumption and studies on consumer behavior in other fields. Evidence is particularly strong using the social globalization index, and for high-income economies.

Observers and researchers have argued that the savings glut in emerging and developing economies coupled with financial globalization fueled a housing boom and reckless home loans in the deficit economies, which eventually caused the 2007-08 financial crisis with flawed financial regulations in these markets. While the crisis has prompted many countries to seek to strengthen financial regulations and control fiscal deficits, there has been no policy emphasis on private saving to resolve the imbalances between saving and investment.

This paper studies the effect of globalization in the social, cultural and economic dimensions on household saving. There are several reasons why globalization may affect household saving. First, social interactions between different cultures can induce value changes, resulting in shifts in saving behavior and possible convergence in saving rates,

when other things are equal. Second, as in the framework of Veblen's conspicuous consumption theory, the importance of consumption is heightened in a more mobile and urbanized society while leisure activities are devalued. Third, international trade allows consumers to have easier access to more goods that are perceived to display social status, inducing more consumption and lowering saving. The results of the paper find evidence supporting the above hypotheses, and provide an additional explanation why household saving has been declining in recent decades, particularly in high-income economies. It should be noted that the lack of evidence for lower income economies may be caused by poor data quality, reflected by a comparatively small number of these economies available for the study, all with relatively short time dimensions.

If household saving continues to trend down with globalization, investment and productivity growth may suffer if no remedies are taken to offset the decline in national saving. Although low saving economies such as the U.S. have been taking advantage of financial inflows from high saving economies, these external sources may dry up. Corporate saving will need to take a more important role in financing capital spending (as in Japan's case). Although standard theories suggest fiscal and monetary policies may be more effective with a lower household saving rate, the long-run effect of fiscal deficits on interest rate may be greater and more private investment may be crowded out. Thus, restraining long-term fiscal deficits may become more important.

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Appendices

Table 1. List of Variables

Variable	Description and source
Net household saving rate	OECD; and calculated from the United Nations's National Accounts Official Country Data; accessed Nov. 9, 2014.
Social and economic globalization	The KOF index of social or economic globalization (http://globalization.kof.ethz.ch/); accessed Nov. 4, 2014.
GDP per capita	In constant 2005 USD; rescaled from GDP per capita in constant 2000 U.S. dollars, WDI. Accessed May 10, 2015.
GDP growth rate	Calculated from GDP in constant 2000 USD, WDI.
Old and young dependency ratios	WDI.
Consumer price index	WDI and OECD. Base year is 2005. Substituted with GDP deflator if CPI is short or unavailable.
Real interest rate	Calculated using money market rates from IFS (if unavailable, t-bill rates or discount rates are used) and CPI based inflation rates from WDI.
Private credit index	Economic Freedom of the World Data 2012 datasets, Fraser Institute. http://www.freetheworld.com/datasets_efw.html . Accessed Nov. 6, 2014.
Life expectancy at birth	WDI.
Urbanization ratio	Urban population as a percent of total population. WDI.
Female labor participation rate	As a percent of female population ages 15 or older. WDI.
Terms of trade	Export/import price index from the OECD, supplemented by net barter terms of trade index from WDI.
Gini coefficient	Luxembourg Income Study (http://www.lisdatacenter.org/) and the OECD, accessed Jul. 31, 2012; supplemented by WDI.
Youth gender ratio	Male to female ratio for the population between the ages 7 and 21. Derived from data for the population between the ages 0 and 14, World Bank Gender Data Portal. Accessed May 16, 2016.
Public social spending	As a percent of GDP. OECD. Accessed May 15, 2016.
Fiscal balance	As a percent of GDP. General government's net lending from OECD (accessed Aug. 9, 2016), supplemented by general government's cash surplus from WDI (accessed May 19, 2016) and net public saving from WID.
Corporate saving rate	Net corporate saving as a percent of nation income, WID.
Per capita household financial assets	In constant 2005 USD. Calculated from household total financial assets per capita in USD at current PPPs, OECD. Accessed April 26, 2016.

Abbreviations:

IFS: International Financial Statistics, the International Monetary Fund. Accessed Jul. 31, 2012.

WDI: World Development Indicator database, the World Bank. Accessed Nov. 9, 2014, unless stated differently in the table.

WID: the World Wealth and Income Database (<http://www.wid.world>). Accessed May 16, 2016.

Table 2. Economies Included in the Regressions

The small sample model selected by BIC (Table 3):

Australia, Canada, Czech, Denmark, Finland, France, Germany, Italy, Mexico*,
Netherlands, Sweden, United Kindom, United States

The large sample model selected by BIC (Table 4):

Australia, Austria, Belgium, Canada, Chile, Croatia, Cyprus, Czech, Denmark,
Egypt, Estonia, Finland, France, Germany, Greece, Honduras*, Hungary, India,
Iran, Ireland*, Italy, Japan, South Korea, Latvia, Lithuania, Mexico, Netherlands,
New Zealand, Norway, Philippines, Poland, Portugal, Slovakia, Slovenia, South
Africa, Spain, Sweden, Switzerland, Ukraine, United Kingdom, United States,
Venezuela*

The small sample model selected by AIC (Table 6):

Australia, Canada, Czech*, Denmark*, Finland*, France*, Germany*, Italy*,
Mexico*, Netherlands*, Sweden*, United Kindom*, United States

The large sample model selected by AIC (Table 7):

Australia, Austria*, Belgium*, Canada, Chile*, Croatia*, Czech*, Denmark*,
Egypt*, Estonia*, Finland, France, Germany*, Greece*, Honduras**+, Hungary*,
India**+, Iran*, Ireland**+, Italy, Japan, South Korea**+, Latvia*, Lithuania*, Mexico,
Netherlands, New Zealand**+, Norway, Philippines*, Poland*, Portugal*,
Slovakia*, Slovenia*, South Africa*, Spain*, Sweden, Switzerland, Ukraine**+,
United Kingdom, United States, Venezuela**+

* Not included in the regressions using the MG or PMG estimators due to short panel lengths.
For Table 7, they apply to regressions (1)-(6)

+ Not included in the regressions (7)-(12) in Table 7 using the MG or PMG estimators.

Table 3. Long Run Coefficients in the Small Sample Model: BIC Selected
 (Dependent variable: net saving rate. *P*-values in parentheses)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Estimator:	MG	PMG	Within	MG	PMG	Within	MG	PMG	Within
Social globalization	-0.36 (0.358)	-0.30*** (0.000)	-0.54*** (0.002)	-0.74** (0.040)	-0.27*** (0.000)	-0.39*** (0.003)			
Economic globalization	-0.04 (0.896)	0.09 (0.112)	0.31** (0.046)				0.37 (0.523)	-0.04 (0.418)	-0.02 (0.948)
Fiscal balance	-0.73 (0.144)	-0.22*** (0.000)	-0.43*** (0.005)	-0.54*** (0.008)	-0.18*** (0.000)	-0.33*** (0.006)	-1.67 (0.189)	-0.10** (0.035)	-0.27 (0.351)
Corporate saving	0.94 (0.320)	-0.19** (0.038)	-0.02 (0.939)	0.31 (0.659)	-0.35*** (0.000)	-0.11 (0.583)	2.04 (0.330)	-0.16* (0.089)	0.04 (0.904)
Household financial assets	3.80 (0.478)	0.33 (0.693)	1.92 (0.633)	6.06 (0.409)	-0.18 (0.835)	3.01 (0.476)	-1.92 (0.784)	-0.69 (0.364)	-0.19 (0.969)
<i>EC</i> term	-0.77*** (0.000)	-0.37*** (0.002)	-0.25*** (0.000)	-0.86*** (0.000)	-0.36*** (0.001)	-0.25*** (0.000)	-0.60*** (0.000)	-0.33*** (0.003)	-0.17*** (0.005)
<i>Hausman test</i>		(0.761)	(0.981)		(0.904)	(0.998)		(0.224)	(0.467)

Table 4. Long Run Coefficients in the Large Sample Model: BIC Selected
(Dependent variable: net saving rate. *P*-values in parentheses)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Estimator:	MG	PMG	Within	MG	PMG	Within	MG	PMG	Within
<i>Model selection with life expectancy and GDP per capita (highly correlated with the globalization indexes):</i>									
Social globalization	0.21 (0.582)	0.05*** (0.000)	-0.24** (0.034)	-0.98 (0.327)	-0.10*** (0.000)	-0.25** (0.049)			
Economic globalization	-0.30** (0.045)	-0.06*** (0.000)	-0.02 (0.776)				-0.32 (0.372)	0.21*** (0.000)	-0.12 (0.218)
Life expectancy	-1.28 (0.548)	0.08*** (0.000)	-0.65 (0.171)	-3.62 (0.137)	-1.40*** (0.000)	-0.69 (0.150)	5.17 (0.285)	-2.28*** (0.000)	-1.02** (0.048)
Fiscal balance	0.62 (0.340)	-0.16*** (0.000)	-0.19 (0.245)	-0.49 (0.476)	-0.57*** (0.000)	-0.18 (0.263)	0.90 (0.414)	-0.22*** (0.000)	-0.14 (0.467)
GDP per capita	8.04 (0.649)	4.89*** (0.000)	2.83 (0.523)	37.21 (0.234)	9.05*** (0.000)	2.94 (0.486)	-91.83 (0.292)	10.26*** (0.000)	1.88 (0.711)
<i>EC term</i>	-0.88*** (0.000)	-0.45*** (0.000)	-0.24*** (0.000)	-0.85*** (0.000)	-0.38*** (0.000)	-0.24*** (0.000)	-0.79*** (0.000)	-0.36*** (0.000)	-0.23*** (0.000)
<i>Model selection without life expectancy and GDP capita:</i>									
Social globalization	-0.37 (0.504)	-0.03 (0.284)	-0.29*** (0.001)	-0.60* (0.062)	-0.04** (0.032)	-0.35*** (0.000)			
Economic globalization	-0.12 (0.821)	0.02 (0.443)	-0.09 (0.172)				3.29 (0.333)	-0.01 (0.622)	-0.32*** (0.001)
Fiscal balance	1.43 (0.314)	-0.34*** (0.000)	-0.19 (0.203)	-0.07 (0.873)	-0.34*** (0.000)	-0.21 (0.148)	-2.63 (0.132)	-0.25*** (0.000)	-0.14 (0.483)
GDP growth	-1.59 (0.178)	-0.17*** (0.002)	-0.27 (0.299)	-0.19 (0.716)	-0.24*** (0.000)	-0.29 (0.284)	1.33 (0.657)	-0.10 (0.129)	-0.20 (0.507)
<i>EC term</i>	-0.78*** (0.000)	-0.35*** (0.000)	-0.24*** (0.000)	-0.73*** (0.000)	-0.34*** (0.000)	-0.23*** (0.000)	-0.61*** (0.000)	-0.30*** (0.000)	-0.22*** (0.000)
<i>Hausman test</i>		(0.925)	(0.790)		(0.753)	(0.967)		(0.736)	(0.574)

Table 5. Long Run Coefficients - with Dummies for Crises
(Dependent variable: net saving rate. *P*-values in parentheses)

	Small sample						Large sample					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Estimator:	MG	PMG	Within									
Social globalization	-1.35 (0.274)	-0.18*** (0.000)	-0.41*** (0.002)				-0.11 (0.575)	0.01 (0.730)	-0.37*** (0.000)			
Economic globalization				-0.01 (0.972)	0.36* (0.068)	-0.03 (0.936)				0.36 (0.583)	0.04** (0.012)	-0.34*** (0.001)
Fiscal balance	-0.62*** (0.006)	-0.27*** (0.000)	-0.45*** (0.003)	-0.52** (0.026)	-0.27*** (0.000)	-0.34*** (0.005)	0.21 (0.509)	-0.22*** (0.000)	-0.23* (0.100)	-2.90 (0.192)	-0.17*** (0.001)	-0.16 (0.422)
Corporate saving	-0.19 (0.795)	-0.10 (0.286)	0.03 (0.897)	-1.16 (0.406)	-0.41*** (0.000)	-0.07 (0.767)						
Household financial assets	5.41 (0.583)	1.69* (0.089)	3.11 (0.472)	21.87 (0.414)	-4.00*** (0.000)	4.15 (0.348)						
GDP growth							0.03 (0.899)	-0.29*** (0.000)	-0.28 (0.281)	-0.22 (0.415)	-0.05 (0.142)	-0.18 (0.533)
Dummies for crises years	yes											
<i>EC</i> term	-0.72*** (0.009)	-0.34*** (0.001)	-0.25*** (0.000)	-0.84*** (0.000)	-0.34*** (0.000)	-0.25*** (0.000)	-0.80*** (0.000)	-0.33*** (0.000)	-0.23*** (0.000)	-0.68*** (0.000)	-0.33*** (0.000)	-0.21*** (0.000)

Table 6. Long Run Coefficients in the Small Sample Model: AIC Selected
(Dependent variable: net saving rate. *P*-values in parentheses)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Estimator:	Within	MG	PMG	Within	MG	PMG	Within						
Social globalization	-0.39* (0.051)	-0.34* (0.091)		-0.44** (0.046)	-0.38* (0.067)		-0.30** (0.022)	-0.32 (0.575)	-0.45** (0.021)	-0.27** (0.036)			
Economic globalization	0.12 (0.251)		0.03 (0.788)	0.10 (0.312)		-0.02 (0.846)	0.07 (0.430)				0.32*** (0.005)	-0.20** (0.041)	-0.00 (0.961)
Fiscal balance	-0.85*** (0.000)	-0.83*** (0.000)	-0.99*** (0.000)	-0.75*** (0.000)	-0.73*** (0.000)	-0.88*** (0.000)	-0.88*** (0.000)	-1.33 (0.180)	-0.63*** (0.000)	-0.86*** (0.000)	-1.29* (0.065)	-1.15*** (0.000)	-0.99*** (0.000)
Corporate saving	-0.32*** (0.000)	-0.37*** (0.000)	-0.43*** (0.000)	-0.22** (0.031)	-0.26** (0.011)	-0.29** (0.014)	-0.27* (0.073)	-0.36 (0.237)	-0.52*** (0.000)	-0.30** (0.020)	-0.15 (0.793)	-0.71*** (0.000)	-0.32** (0.046)
Household financial assets	4.77 (0.205)	4.78 (0.201)	3.25 (0.421)	2.31 (0.428)	2.74 (0.301)	1.50 (0.606)	3.32 (0.307)	-9.41 (0.125)	-5.46* (0.067)	3.47 (0.255)	-12.15** (0.000)	0.77 (0.828)	2.59 (0.365)
Old dependency ratio	0.18 (0.558)	0.14 (0.654)	0.24 (0.453)	-0.10 (0.752)	-0.11 (0.704)	-0.03 (0.938)							
Life expectancy	-0.53 (0.104)	-0.39 (0.375)	-0.59 (0.293)										
Terms of trade	2.20 (0.647)	3.31 (0.460)	5.73 (0.255)	0.45 (0.931)	1.76 (0.730)	5.39 (0.304)	3.29 (0.383)	19.90 (0.441)	14.26*** (0.000)	3.89 (0.268)	19.65 (0.321)	12.02*** (0.000)	3.37 (0.357)
Young age sex ratio	62.20 (0.499)	48.42 (0.592)	-18.60 (0.854)	102.60 (0.298)	88.07 (0.371)	2.66 (0.981)							
GDP growth	0.63** (0.012)	0.68*** (0.005)	0.61** (0.049)	0.43* (0.079)	0.46* (0.053)	0.46 (0.127)	0.47* (0.065)	2.77 (0.129)	1.29*** (0.000)	0.48* (0.060)	2.21 (0.122)	2.00*** (0.000)	0.40 (0.202)
Gini coefficient				0.15 (0.538)	0.12 (0.625)	-0.16 (0.415)							
Public social spending	-0.57 (0.110)	-0.59 (0.102)	-0.97** (0.015)	-0.75* (0.058)	-0.76* (0.056)	-1.12*** (0.007)	-0.89** (0.047)	-1.06 (0.468)	-0.18 (0.258)	-0.89** (0.046)	-1.37 (0.143)	-0.80*** (0.001)	-1.21*** (0.006)
EC term	-0.36*** (0.000)	-0.37*** (0.000)	-0.33*** (0.000)	-0.37*** (0.000)	-0.37*** (0.000)	-0.34*** (0.000)	-0.34*** (0.000)	-0.82*** (0.000)	-0.65** (0.014)	-0.34*** (0.000)	-0.87*** (0.003)	-0.58*** (0.004)	-0.31*** (0.000)

Table 7. Long Run Coefficients in the Large Sample Model: AIC Selected
(Dependent variable: net saving rate. *P*-values in parentheses)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Estimator:	MG	PMG	Within									
Social globalization	-1.07 (0.173)	-0.31*** (0.000)	-0.33*** (0.002)				-0.58 (0.350)	0.05 (0.135)	-0.21** (0.040)			
Economic globalization				-2.09* (0.091)	0.11 (0.101)	-0.11* (0.091)				-0.26 (0.243)	-0.02 (0.206)	-0.16* (0.062)
Life expectancy	-2.90 (0.260)	0.34 (0.117)	0.40 (0.159)	-1.93 (0.570)	-1.95*** (0.000)	-0.05 (0.868)						
Fiscal balance	0.34 (0.516)	0.36*** (0.000)	-0.04 (0.816)	0.09 (0.948)	0.44*** (0.000)	-0.03 (0.869)	-0.40 (0.293)	-0.19*** (0.000)	-0.15 (0.453)	-0.45 (0.153)	-0.03 (0.598)	-0.11 (0.640)
Gini coefficient	-1.99 (0.207)	-0.00 (0.970)	-0.20 (0.400)	-7.32 (0.164)	-0.78*** (0.000)	-0.32 (0.201)	0.68 (0.266)	-0.44*** (0.000)	-0.36 (0.109)	0.13 (0.857)	-0.27*** (0.002)	-0.46* (0.072)
Private credit	-0.34 (0.833)	0.24 (0.232)	0.04 (0.888)	1.54 (0.131)	0.19 (0.342)	0.16 (0.634)	0.29 (0.674)	-0.23* (0.053)	0.22 (0.527)	0.07 (0.856)	-0.14 (0.383)	0.35 (0.350)
GDP growth	1.01 (0.488)	0.48*** (0.000)	-0.39** (0.046)	2.61 (0.228)	0.24*** (0.000)	-0.44** (0.041)	-0.03 (0.920)	-0.42*** (0.000)	-0.35 (0.137)	0.21 (0.478)	-0.45*** (0.000)	-0.32 (0.207)
Female labor participation	-0.90 (0.252)	-0.40*** (0.000)	-0.11 (0.563)	-0.07 (0.945)	-0.01 (0.941)	-0.21 (0.249)						
<i>EC</i> term	-1.15*** (0.000)	-0.33*** (0.001)	-0.35*** (0.000)	-0.93*** (0.000)	-0.29** (0.017)	-0.31*** (0.000)	-0.91*** (0.000)	-0.33*** (0.000)	-0.28*** (0.000)	-0.78*** (0.000)	-0.31*** (0.000)	-0.25*** (0.000)

Table 8. Long Run Coefficients in the Large Sample Model: High Income Economies
(Dependent variable: net saving rate. *P*-values in parentheses)

Estimator:	BIC selected						AIC selected					
	(1) MG	(2) PMG	(3) Within	(4) MG	(5) PMG	(6) Within	(7) MG	(8) PMG	(9) Within	(10) MG	(11) PMG	(12) Within
Social globalization	-0.67** (0.037)	-0.02 (0.261)	-0.38*** (0.000)				-0.92 (0.248)	-0.27*** (0.000)	-0.21* (0.070)			
Economic globalization				4.56 (0.325)	0.01 (0.522)	-0.34*** (0.002)				-0.30 (0.289)	0.05 (0.162)	-0.13 (0.224)
Fiscal balance	-0.16 (0.760)	-0.37*** (0.000)	-0.19 (0.252)	-1.49 (0.403)	-0.31*** (0.000)	-0.11 (0.629)	-0.55 (0.245)	0.15 (0.118)	-0.08 (0.730)	-0.49 (0.184)	-0.14 (0.265)	-0.04 (0.902)
GDP growth	0.36 (0.311)	0.19* (0.066)	-0.23 (0.614)	-1.33 (0.587)	0.20* (0.052)	-0.09 (0.855)	0.05 (0.895)	0.49*** (0.000)	-0.39 (0.356)	0.41 (0.272)	0.35** (0.014)	-0.36 (0.439)
Gini coefficient							0.59 (0.438)	0.08 (0.424)	-0.42 (0.155)	0.18 (0.847)	0.47*** (0.000)	-0.56 (0.191)
Private credit							0.85 (0.276)	0.22 (0.370)	0.31 (0.493)	0.26 (0.614)	0.85** (0.015)	0.46 (0.391)
<i>EC</i> term	-0.62*** (0.000)	-0.28*** (0.000)	-0.18*** (0.000)	-0.50*** (0.000)	-0.24*** (0.000)	-0.17*** (0.000)	-0.76*** (0.000)	-0.24*** (0.000)	-0.20*** (0.000)	-0.65*** (0.000)	-0.23*** (0.000)	-0.18*** (0.000)

Table 9. Long Run Coefficients in the Large Sample Model: Lower Income Economies
(Dependent variable: net saving rate. *P*-values in parentheses)

	BIC selected						AIC selected					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Estimator:	MG	PMG	Within									
Social globalization	-0.39 (0.639)	-0.08 (0.292)	0.12 (0.416)				0.53 (0.133)	0.24*** (0.004)	0.17 (0.294)			
Economic globalization				-0.16 (0.858)	-0.03 (0.429)	-0.02 (0.685)				-0.11 (0.464)	-0.07*** (0.007)	-0.01 (0.845)
Fiscal balance	0.16 (0.870)	-0.27*** (0.000)	-0.29 (0.197)	-5.75 (0.188)	-0.20** (0.038)	-0.35 (0.146)	0.08 (0.873)	-0.21*** (0.000)	-0.32 (0.119)	-0.32 (0.617)	-0.17** (0.039)	-0.36 (0.136)
GDP growth	-1.93 (0.297)	-0.40*** (0.000)	-0.24 (0.137)	9.63 (0.322)	0.70*** (0.000)	-0.25 (0.128)	-0.31 (0.191)	-0.40*** (0.000)	-0.25 (0.141)	-0.43 (0.126)	-0.41*** (0.000)	-0.25 (0.146)
Gini coefficient							0.97 (0.264)	-0.44*** (0.000)	-0.18 (0.345)	-0.03 (0.962)	-0.73*** (0.000)	-0.14 (0.445)
Private credit							-1.55 (0.210)	-0.48*** (0.001)	0.21 (0.594)	-0.54 (0.122)	-0.13 (0.437)	0.01 (0.973)
<i>EC</i> term	-1.05*** (0.000)	-0.55*** (0.000)	-0.58*** (0.000)	-0.90*** (0.000)	-0.49*** (0.000)	-0.55*** (0.000)	-1.38*** (0.000)	-0.68*** (0.001)	-0.59*** (0.000)	-1.18*** (0.000)	-0.62*** (0.004)	-0.55*** (0.000)

Figure 1. Average Saving Rates by Region and Income (%)

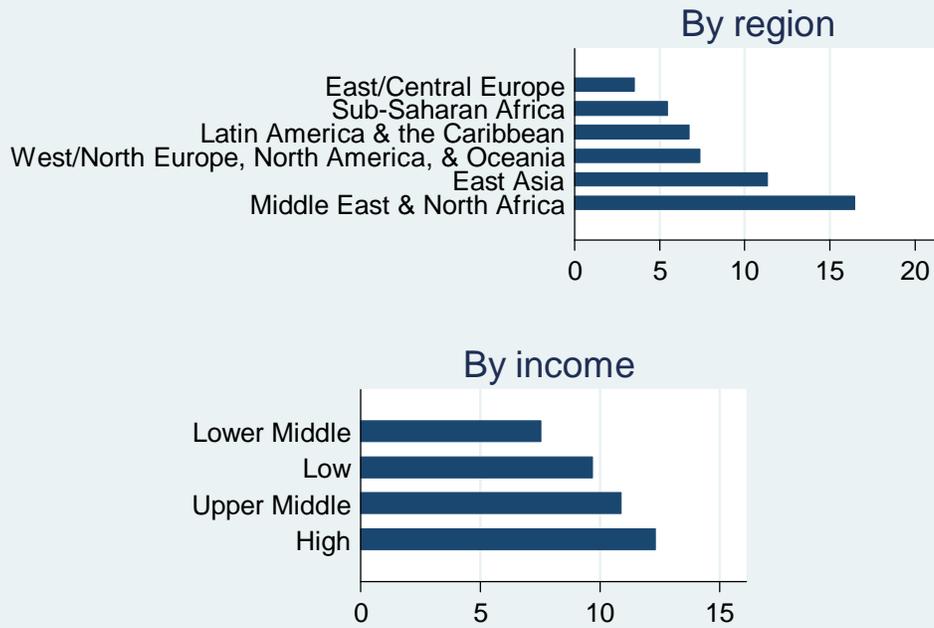


Figure 2. Net Saving Rates and Globalization By Income (%)

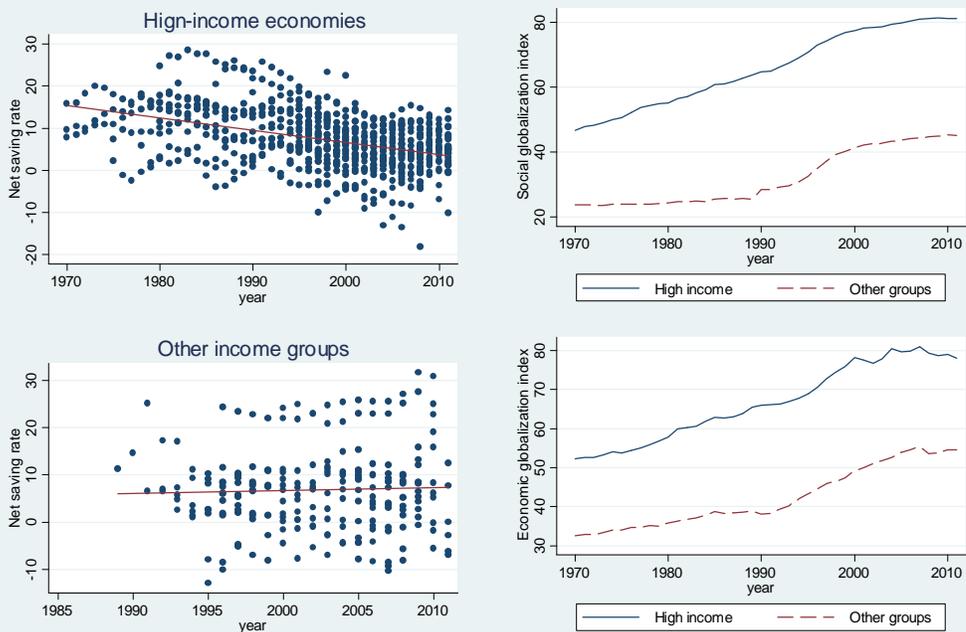
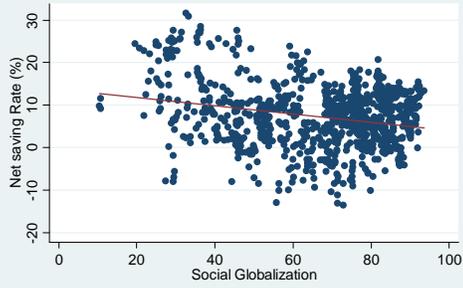


Figure 3. Association between Globalization and Saving

a. With social globalization



b. With economic globalization

