



Wealth accumulation and factors accounting for success

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ABSTRACT

We use detailed income, balance sheet, and cash flow statements constructed for households in a long monthly panel in an emerging market economy, and some recent contributions in economic theory, to document and better understand the factors underlying success in achieving upward mobility in the distribution of net worth. Wealth inequality is decreasing over time, and many households work their way out of poverty and lower wealth over the seven year period. The accounts establish that, mechanically, this is largely due to savings rather than incoming gifts and remittances. In turn, the growth of net worth can be decomposed household by household into the savings rate and how productively that savings is used, the return on assets (ROA). The latter plays the larger role. ROA is, in turn, positively correlated with higher education of household members, younger age of the head, and with a higher debt/asset ratio and lower initial wealth, so it seems from cross-sections that the financial system is imperfectly channeling resources to productive and poor households. Household fixed effects account for the larger part of ROA, and this success is largely persistent, undercutting the story that successful entrepreneurs are those that simply get lucky. Persistence does vary across households, and in at least one province with much change and increasing opportunities, ROA changes as households move over time to higher-return occupations. But for those households with high and persistent ROA, the savings rate is higher, consistent with some micro founded macro models with imperfect credit markets. Indeed, high ROA households save by investing in their own enterprises and adopt consistent financial strategies for smoothing fluctuations. More generally growth of wealth, savings levels and/or rates are correlated with TFP and the household fixed effects that are the larger part of ROA.

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1. Introduction

We use detailed income and balance sheet statements constructed for households in a long monthly panel in an emerging market economy to document and better understand the factors underlying success in achieving upward mobility in the distribution of net worth. The overall growth rate of wealth when accounting for inflation is only a modest 0.3% per year and the wealth distribution is highly skewed, with the relatively rich holding a third of net worth and the bottom half holding less than 10%. But the growth rate of wealth over time is sharply decreasing in initial wealth levels, that is, the relatively poor grow much faster than the rich, at 22% per year vs. 0.09% per year. Further decompositions show that overall inequality comes down substantially as households either transit upwardly over time across initial wealth quartiles or as wealth increases on average for the lower quartiles, so

that the gaps across the quartiles narrow. Geographic location and occupation contribute less than what we might have expected to this story. There is initially increasing wealth inequality across regions for some occupations, increasing for fish/shrimp and cultivation overall and for labor and business initially. But the larger force, about 60%, is the reduction of inequality within the residual category.

Some of the more successful households experience large increases in their relative position in the wealth distribution, while others fall down. Approximately 7% of households in the survey stayed at the same relative position, 43% increased their position, and almost 50% have a negative change in position. The standard deviation of relative position change is 14 points, so again there is substantial mobility within the distribution.

The constructed accounts also allow an exact decomposition of these changes into net savings and incoming gifts/remittances. Savings account for 81% of the change, and, roughly, gifts decrease as initial wealth quartiles increase. The rich actually give some money away, for example. But for the second quartile of initial wealth, incoming gifts play a role equal to savings, even more so for households running businesses (as enterprises made losses in early years).

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Another decomposition allows us to separate the increase in net worth into the role played by the savings rate versus how effectively those savings are used, that is, the return on assets (ROA). Growth of net worth is positively and significantly correlated with savings rates but less so than the high and consistently significant correlation of the growth of net worth with ROA, across the board. In this sense, successful households with high growth of net worth are the households who are productive – who utilize their existing assets to produce high per unit income streams.

In turn we can search for significant covariates of ROA. There is a positive correlation of high ROA with low initial net worth (i.e., the poor are especially productive), a higher education of the head or among household members (especially for those running businesses), a younger age of the head of the household, and a high debt/asset ratio (as we comment on below).

In the robustness checks we control for labor hours and, related, impute a wage cost to self-employment. We also correct for measurement error in initial assets and, in exploring covariates, use IV rather than OLS regressions. We also delete poor wage earning households with few assets. Results are robust to these specifications.

But by far the largest single factor in a decomposition of variance is household specific fixed effects. Related, there is considerable persistence. Households successful over the first half of the sample are very likely to be successful over the second, indicating that luck per se is not a likely explanation for this success. Auto-correlation numbers range from 0.15 to 0.83. In one fast-growing province in the poorer Northeast, persistence is much lower, and there is strong evidence that households are moving out of lower ROA occupations and into higher ones, as the local economy presents opportunities. Variability in household size also undercuts persistence, highlighting the importance of a successful individual rather than a successful household per se. Northeastern households experience more volatility in membership.

As noted in passing above, there is some borrowing, and indeed, high ROA households have higher debt/asset ratios. It thus appears that the financial system does manage to some degree to extend credit to the poor with high returns. Indeed, using more structure for production functions, and using instruments suggested by [Olley and Pakes \(1996\)](#) and [Levinsohn and Petrin \(2003\)](#), we find that high marginal product of capital (MPK) households are likely to borrow more relative both to their wealth and to others. However, there is still a divergence between estimated MPK and average interest rates, so in that sense some households are constrained (a related distortion, others utilize their own wealth at a low return rather than allowing it to be intermediated). Further, we allow interest rates to vary across households as measured in the survey data, as if there were a wedge or distortion from the average, as in [Hsieh and Klenow \(2009\)](#), [Restuccia and Rogerson \(2008\)](#) and [Fernandes and Pakes \(2008\)](#). Re-estimated TFP is no longer correlated with the debt/asset ratio, as if we had now correctly accounted in this way for those credit market distortions, or other things.

The dynamics coming from the panel are revealing about the distortions which are harder to rationalize. Consistent with a literature on growth with financial frictions, we find, using monthly data, that households with high and persistent ROA are households that tend to save more. This is consistent with the models of [Buera \(2008\)](#) that poor households can save their way out of constraints, say to eventually enter high return businesses, or expand existing businesses. However, this result is not robust to annual data. In the model of [Moll \(2009\)](#) and [Banerjee and Moll \(2009\)](#) persistent ROA should increase the growth of net worth as households save their way out of constraints. Overall however savings levels and rates and growth of wealth are all correlated with the level of ROA, the household fixed parts of ROA, and measured TFP.

As further evidence of constraints, high ROA households tend to save by investing, that is, they accumulate physical assets. The top quartile of ROA households invest in their own enterprise activities, but this is not the case for the middle and lower ROA groups. Instead, for many, increases in net worth are accomplished with increases in financial assets or cash saving. Related, relative to others in the cross-section, high ROA households are less likely to use capital assets to smooth consumption. Instead, they use consumption to finance investment deficits. High ROA households are more actively involved in financial markets month by month, in the sense of using formal savings accounts and sources of borrowing, and engage less in informal markets, i.e., receiving fewer gifts. But high ROA households do use cash more than the low ROA households, as well. Indeed, relatively high ROA households surprisingly do seem to seek financial autarky over time; in the long run reducing their debt, reducing the amount of gifts they receive, and increasing the amount in formal savings accounts. This even though they retain a relatively high ROA.

As ROA is a widely accepted indicator of success in corporate accounting, but less so in economic theory, we also estimate total factor productivity (TFP) as was anticipated earlier. We find that it is correlated with ROA and in turn with candidate covariates, but less than before. The data are also adjusted for aggregate risk, consistent with the perfect markets, capital asset pricing model at the village level, utilizing the work of [Samphantharak and Townsend \(2009a\)](#). We find a correlation of risk-adjusted returns with ROA, as a measure of individual talent, and a correlation of risk-adjusted returns with growth of net worth. But overall results are weaker, for example, high risk-adjusted return households do not invest more in their own enterprises. This suggests again that the capital markets are not perfect in these data, though there remains some consumption anomalies which we discuss at the end.

This paper is organized as follows. Section 2 describes the data, starting from a macro-level perspective as background and moving to the micro-level of selected areas from which we have detailed information on assets, liabilities, wealth, income, consumption, investment, and financial transactions. Section 2 also describes the wealth distribution and its decomposition. Section 3 decomposes growth of net worth into productivity and saving rates, and uses correlation analysis to show their relative importance to the growth of net worth. Section 4 uses regression analysis to find out what factors are associated with success as measured by a high rate of return on assets. Section 5 shows that ROA has considerable persistence, indicating that luck per se is not systematically related to success. Section 6 shows the predictive power of ROA on physical assets accumulation. Section 7 studies the financial strategies that high ROA households use and related imperfections in credit markets. Section 8 provides a short story of a selected successful household, as a case study, to complement the overall statistical analysis, and Section 9 concludes.

2. Data

This paper uses data from the Townsend Thai monthly survey,¹ an ongoing panel of households being collected since 1998. The survey is conducted in 4 provinces (or changwat in Thai), the semi-urban changwats of Chachoengsao and Lopburi in the Central region and the more rural Buriram and Sisaket in the poorer Northeast region (see the map in [Fig. 1](#)). This paper studies the balanced panel of 531 households that are interviewed on a monthly basis, dating from January, 1999, to December, 2005

¹ See further details of questionnaire design, and sampling design of this survey, from [Paulson et al. \(1997\)](#) and [Binford et al. \(2004\)](#) respectively.

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