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HOUSEHOLD FINANCIAL ASSETS IN THE PROCESS OF DEVELOPMENT

by

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Abstract

Systematic information on household financial asset holdings in developing countries is very sparse; we review some available data and current policy debates. Although financial asset holdings by households are highly concentrated, deeper financial systems are correlated with improved income distribution. For low-income countries, the relevant question for poor households is not how much financial assets they have, but whether they have any access to financial products at all. Building on and synthesizing disparate data collection efforts by others, we produce new estimates of access percentages for over 150 countries. Across countries, access is negatively correlated with poverty rates, but the correlation is not a robust one: thus the supposed anti-poverty potential of financial access remains econometrically elusive. Despite policy focus on the value of credit instruments, it is deposit products that tend to be the first to be used as prosperity increases, before more sophisticated savings products and borrowing.

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HOUSEHOLD FINANCIAL ASSETS IN THE PROCESS OF DEVELOPMENT

Introduction and summary

The financial sector plays a multidimensional role in the process of development. It *mobilizes and concentrates* resources for investment and allocates them based on an assessment of risk and return, judging creditworthiness and monitoring performance; it offers *risk-reduction* and risk-pooling services that have both direct effects on welfare (by providing insulation from shocks) and indirect effects on growth, by making riskier – but potentially high-yield – investments in human and physical capital accessible. While much of the recent literature focuses on the interaction of enterprises, large and small, with financial markets and financial intermediaries, households are important consumers of financial products and household behavior influences the scale and asset mix of finance. Furthermore, poverty and welfare can be strongly influenced by the degree to which households have *access* to the formal financial sector.

This paper reviews these three dimensions (mobilization, access and risk-reduction) in a quantitative context, concentrating on illustrating some of the very limited data that are available for developing countries. Because the discussion combines data, econometric and conceptual issues, we begin with an extended introduction and summary allowing the main threads of the story to be presented without technical digression.

Mobilization and concentration

The first dimension relates to the role of household financial asset accumulation in helping mobilize resources that can be effectively deployed for productive investment, thereby accelerating growth. There is clearly something to this mechanism, inasmuch as the well-documented link between banking depth and subsequent economic growth almost necessarily entails household accumulation of bank deposits to back the intermediation that is here involved.

However, it needs to be recognized that financial asset holdings are highly concentrated, even more so than nonfinancial assets, to the extent that the financial assets of the lower

quartiles can be largely ignored in any discussion of national resource mobilization. This is true for the United States and other advanced economies, and likely holds with even more force for developing countries.

Wealthy households in many developing countries prefer to hold a relatively large fraction of their assets in safer, more transparent, more diversified and more efficient financial markets offshore.[1] Since such holdings may be illegal because of remaining exchange controls, or because taxes were not paid, offshore holdings would not show up in survey data, and this is likely one of the reasons that most developing countries have not conducted comprehensive surveys of financial asset holdings of households.

The share of financial assets in the average household's domestic portfolio increases with the national level of development (and in advanced economies it increases also with the wealth of the household). Within financial assets, holdings of risky assets are even more concentrated: for these, holdings below the top 5 percent of wealth-holders are nationally negligible.

Curiously, even though the financial assets of the poor are in aggregate negligible, it appears that countries with deeper financial systems have less absolute poverty, even after taking account of mean national income. This suggests that a deep financial system also affects the structure of the economy in subtle ways that are relevant for the inclusiveness of economic development.

Access

The main focus of current policy concern with regard to household finance in developing countries is the perceived need to increase the access of poor households to basic financial services; deposits, payments, insurance and credit. In other words, policy-driven research for such countries has focused not on allocation decisions between

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[1] Identified offshore banking deposits as a share of GDP are statistically uncorrelated across countries with per capita GDP (Hanson, 2003). Hence, since the elasticity of total bank deposits with respect to income is well over one, we may conclude that poorer countries tend to hold a higher share of their financial assets offshore.

different assets, or on total amounts held, but simply on whether a participation threshold has been reached.

Whether examined from household survey data, or from inference based on numbers of bank and other financial intermediary accounts, it is clear that the fraction of households using[2] the services of formal[3] financial intermediaries is small in most developing countries. In contrast, access percentages in the 80s and 90s are recorded for households in advanced economies (where the relevant policy issues are best discussed in the language of exclusion rather than of access).

Despite the lack of concrete evidence, it is also generally believed that there is also a *direct* role for the financial system in reducing poverty by reaching more households with microfinance services. But the scale of this impact remains unclear. Access percentages are correlated with poverty rates and national per capita income, but not very closely. However, conditioning on mean national income, attempts (including in this paper) to detect a statistically robust causal relationship on cross-country data between financial *access* and poverty have not been successful to date. Intriguingly, then, the strongest cross-country econometric evidence for a financial sector impact on poverty relates to financial depth (total value of private credit in relation to GDP), and not financial access (percentage of households with an account). Whether this is a causal effect is unclear.

Microeconomic studies on the impact of microfinance on poverty are also surprisingly inconclusive. Although beneficiaries of microfinance schemes are vocal in their praise and gratitude, a comprehensive assessment needs to consider displacement effects and endogeneity of financial access. Only in a few cases so far has it been possible to devise convincing ways of adjusting for, or excluding, these complicating factors. On balance, most observers regard microfinance interventions as poverty-reducing, while continuing

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[2] There is an obvious and important conceptual distinction between access and usage, and surveys often explore this (for further discussion, see Honohan, 2004b). In the present paper we treat the terms synonymously, which may not be too bad an approximation when equating access to the use of *any* financial product.

[3] The discussion is generally confined to the formal financial system and as such excludes borrowing from informal lenders and participation in, for example. informal rotating savings and credit schemes.

to call for further analysis of methodologies for increasing cost-effectiveness and sustainability of these initiatives, most of which continue to benefit from external subsidies.

Risk reduction and the asset mix

Turning to the allocation of household assets among financial assets with different risk profiles, the focus shifts to risk-reduction for these households. After all, given the ability of intermediaries to pool risk, household behavior is only of limited importance in influencing the national supply of risk-finance.

Much of the recent literature on household financial asset allocation has been driven by a concern that households are not allocating their savings in an optimal manner. The suggestion is often made that, whether because of erroneous risk calculations, or simply out of ignorance, households fail to adopt strategies and products that would give them a dominant risk-return mix. To the extent that household investment allocation errors are confined to lower-wealth households, they are unlikely to significantly affect macroeconomic aggregates.

For developing countries, the bulk of the population has no practical access to sophisticated financial instruments (or even to such products as medium-term residential mortgages). As economies become more prosperous, increasing proportions of the population begin to move beyond deposit products into life insurance, loans and other more sophisticated products. To that extent, despite considerable interest in the topic, the relevance of such concerns for poverty reduction and growth remain for the present limited.

Implications

In considering policy with respect to household finance in developing countries, it is not unreasonable to distinguish rather sharply between the objectives of "finance for growth" and "finance for all".

Sustained national economic growth calls for the intermediation of sizable resources through an efficient financial system. To the extent that these resources come from the savings of households, it refers to relatively prosperous households: in this context only the top few deciles need to be considered. The more developed the economy, the more deciles become relevant. Policy designed to mobilize a larger volume of funds for intermediation should therefore be directed to matters that affect behavior of the upper deciles. Such policies would include those affecting political confidence, macroeconomic stability and expected after-tax returns on financial savings.

A rather different set of policies comes to the fore in seeking to expand the number of households with access. These include regulatory design for microfinance institutions, ensuring that measures designed to protect consumers against loss do not impose costs so heavy as to deter entry into this low end of the market, characterized by low margins but potentially high volume.

Current policy concerns in advanced economies on sub-optimal allocation of the household portfolio remain of secondary importance in most developing countries. Instead, legal, regulatory and tax policies affecting the cost and availability to lower income households of such products as insurance and home-construction lending loom large on the policy agenda.

The remainder of the paper is divided into five sections. The first presents some known statistical regularities about the variation across income groups and countries of household financial asset holdings. Section 2 discusses the channels through which household financial asset holdings affect national growth and poverty. Section 3 turns to the question of how widespread is access by households to financial assets, presenting new data for over 150 countries, and using this data to assess whether such access *per se* helps to reduce aggregate poverty. Section 4 briefly discusses household choice among different financial assets. Concluding remarks are in Section 5.

1. Household financial assets: how holdings vary across income groups and countries

Our knowledge of the pattern of household financial asset holdings varies greatly by country. The US has the most comprehensive and apparently reliable data in the form of the triennial Survey of Consumer Finances, preliminary results of whose most recent wave, from 2004, have just been published by the Federal Reserve Board (Bucks et al., 2006, updating Aizcorbe et al., 2003). Earlier waves of the US survey are thoroughly compared with data for four other advanced economies, Germany, Italy, Netherlands and the UK, in Guiso et al. (2002). Other advanced countries for which data are available include Korea and Japan. Data for developing countries are, however, very sketchy and current data collection exercises in this area are focused more on measuring access or participation than on quantifying asset magnitudes. In this review we draw on much more limited data mainly on savings balances collected in general household surveys for Ghana, Jamaica and Vietnam, on a 2003 module on household assets and liabilities in India collected as part of the 59th National Sample Survey (NSSO, 2005), on a survey of investment in stock market assets in India (Kar et al. 2003) and on a household survey carried out in 2002 in rural and urban areas in China by CASS (Li and Zhao, 2006). They show some commonalities with other advanced economies, but also some differences which may be due to survey limitations.

Despite the sketchiness of data sources, some stylized facts can be adduced by reasonable extrapolation and interpolation from what we do have. One cannot, of course, rely wholly on the assumption that cross-sectional patterns within economies – variations in the pattern of asset allocation by such characteristics as age, education and wealth – can be extrapolated from the rich countries for which we do have cross-sectional data to the poor. Nevertheless, some of those patterns likely do hold up qualitatively (and we will show the extent to which some of them are confirmed in our handful of developing countries for which some data are available) and the patterns can be scaled to the aggregate magnitudes for which data are available in the poor countries.

Financial assets[4] represent a sizable proportion of the aggregate nonhuman wealth of households—over 50 percent in Norway (Jantti and Sierminska, 2006) and over 40 percent in the US, even if we take the results of household surveys, which may disproportionately understate financial assets if compared to data from national balance sheets computed from national accounts sources (Davies et al. 2006). The share of financial assets in total wealth tends to increased with mean income. For Australia, Canada, Germany, Italy the Netherlands and Sweden, the figure obtained from household surveys is about 30 percent (Guiso et al. 2003, Jantti and Sierminska, 2006)[5]; in China it is 22 percent (Li and Zhao, 2006), in Korea only 17 percent (Yoo, 2005) and in India about 4 percent (NSSO, 2005, Subramanian and Jayaraj, 2006).

Household financial liabilities also need to be considered for a rounded view; indeed, it would be very artificial to look only at the asset side when it comes to financial assets and liabilities, since both are endogenous and thought to be determined in large part by the same explanatory variables. In aggregate, household financial liabilities amount to as much as 30 percent of gross household financial assets in the US, where consumer and household finance is very well developed. Indeed, for all but about the top decile of the *income* distribution in that country, borrowing exceeds gross financial asset holdings. In other words, *net* financial assets for the lower 90 percent are negative. The largest category of debt is mortgage and home equity debt, reflecting the fact that a homeowner's residence can represent valuable collateral. Installment credit (mainly related to the purchase of automobiles and other household durables) and credit card debt are also used in rich countries, but amount to smaller sums.

Borrowing possibilities for low-income households from formal intermediaries are more limited in less advanced economies. In these countries, middle class employee households may borrow unsecured, but often under arrangements whereby servicing charges are deducted from wage payments by the employer and remitted to the financial intermediary.

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[4] See Appendix 1 for a description of how financial assets are defined.
[5] The figure for Japan has been highly volatile in view of the housing boom and bust of the 1980s and 1990s (Iwaisako, 2003).

Concentration of financial asset holdings

Just as the share of financial assets in the total increases with mean income across countries, the distribution of financial wealth within advanced economies appears to be more concentrated than nonfinancial nonhuman (and than human wealth or income; cf. Figure 1 for the US data). This may be less true in developing countries. For example, Indian survey data suggest that the share of financial in nonhuman wealth is not monotonically increasing in wealth (Subramanian and Jayaraj, 2006). The relatively undeveloped equity markets—limiting the availability of sophisticated financial claims on the local capital stock—the importance of land holding and the fact that most businesses are closely-held would be contributing factors to this difference. In China too, financial wealth as surveyed is *not* more concentrated than other wealth (Li and Zhao, 2006); however, China's status as a transition economy must be taken into account in considering the relevance of this observation for other countries.

Nevertheless, it is true for all countries that the bulk of financial assets is held by relatively wealthy households. Indeed, the bottom half of the wealth distribution in the USA holds no more than 3 percent of the system's financial assets. The same group holds about 4 percent of the risk-free assets and 2 percent of the risky assets.

Given the fact that a much larger fraction of the population in poor countries holds no financial assets at all, and given that income is in most cases more unequally distributed in developing countries, it would seem likely that the share of financial assets held by the lower deciles would be even lower in the typical low or middle-income country. In other words, concentration of financial asset ownership is surely even higher in poor countries. This conjecture is not, however, strongly confirmed by the available survey data. In India—where the data on risk-free financial assets includes cash holdings – the bottom half of the wealth distribution hold about 6 percent of risk-free assets, and less than 3 percent of risky assets (shares). For three other countries, Ghana, Jamaica and Vietnam (Figure 3), in the absence of wealth deciles, we calculated mean savings balances for expenditure/consumption deciles. One expects a higher percentage of total savings held

by the bottom half of the expenditure decile than on the wealth decile, but the figures obtained are surprisingly high. The Ghana and Vietnam surveys respectively show 11 and 10 percent of reported savings balances being held by the bottom half of the *expenditure* distribution of the surveyed households.[6] It may well be that these surveys do not capture the top end of the distribution as well as the specialized financial asset surveys for advanced economies, given that their purpose is not mainly to cover wealth issues. We prefer to discount these particular findings, and rely on the patterns observed more reliably in advanced economies to conclude that policy directed at mobilizing investable funds through the issue of financial assets can safely ignore the lower quartiles of the wealth distribution at least as far as the aggregate sums mobilized are concerned.[7]

Taking account also of the net financial indebtedness of all but the highest income groups, it seems that the net provision of investable funds from the household to the business and government sectors depends essentially on the top decile of the income distribution – for the US, this group contributes 91 percent of net household financial assets (as compared with 72 percent of *gross* household financial assets).

For advanced economies, the increased share of financial assets in total wealth is more a function of increased *participation*[8] as we go up the income scale, more than an increase in the value of holdings conditional on participation. Interestingly, for Ghana a similar pattern appears for savings balances: the proportion of households reporting some savings balances does increase with income/expenditure, and the unconditional elasticity is about 1.8, but the ratio of savings balances to expenditure remains broadly constant conditional on reporting any holdings. However, in Vietnam, where very high

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[6] For Jamaica, the figure is even higher at 35 percent. However the Jamaica data is marred by a failure in the coding for these questions to distinguish between nonresponding households and respondents who report zero balances. The percentage reporting positive balances actually declines from about 30 percent in the middle quartiles of expenditure to 17 percent for the top five percent, strongly suggesting a sharp increase in nonresponse at the top of the income distribution for this country.

[7] That is not to say that banks will necessarily ignore the smaller depositor. Handling small deposits is costly, but potentially more profitable per dollar transacted. There is value at the "bottom of the pyramid" for intermediaries that can master the necessary cost efficiencies. But the volume of resources mobilized is negligible in terms of aggregate national intermediation.

[8] By participation is meant whether or not holdings are nonzero. Fixed costs, including those of acquiring information, helps explain why households hold only a subset of available assets. King and Leape (1998) estimate a decision model incorporating such costs as well as nonegativity constraints on the US SCF data.

participation is reported for all expenditure quartiles this is not true: the elasticity of savings balances to expenditures is about 1.7 for those households reporting some balances.[9]

Households' share of aggregate financial assets. Wealthy households hold a sizable fraction of aggregate bank deposits. The household sector in aggregate holds more than 63 percent of total deposits at financial intermediaries in the United States, and 80 percent of deposits from nonfinancial nongovernment domestic sectors.[10] For the eurozone, comparable percentages are reported: 60 percent and 78 percent respectively.[11] Individuals hold 43 percent of all resident deposits in the UK, a figure that rises to over two-thirds if deposits of financial institutions and public administration are excluded.[12] Just over a half of the large deposit base of Chinese financial institutions is in the form of household savings deposits.[13] In Egypt, households account for 78 percent of total deposits.[14] In the Eastern Caribbean Currency Union, household deposits are 60 percent of the total, or 68 percent if financial and government deposits are excluded.

In addition, households' claims on managed funds, combined with their direct holdings, can be considered to finance a large share of traded equities in the more advanced economies.

Offshore assets and liabilities. Although households, like other investors, tend to display a degree[15] of home preference that discourages cross-border holdings of financial assets, nevertheless, reasons of political risk and tax avoidance can provide an important push in the opposite direction, resulting in capital flight and the holding of sizable and often

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[9] The data for Jamaica is again out of synch: the elasticity here is below 0.7.

[10] Tables L204 and L205 of http://www.federalreserve.gov/releases/z1/current/z1r-4.pdf. The percentages include savings and time deposits as well as checking accounts and currency.

[11] Households accounted for €4.3 trillion of a total of domestic non-government deposits of €7.0 trillion in eurozone monetary financial intermediaries at end-2005. Non-government nonfinancial deposits amounted to €5.6 trillion (https://stats.ecb.int/stats/download/weas02_05/weas02_05/weas02_05.pdf).

[12] http://www.bankofengland.co.uk/statistics/abl/2005/dec/tableb.pdf.

[13] Including demand deposits and time deposits (http://www.pbc.cov.cn, Table: "Sources and Uses of Credit Funds of Financial Institutions").

[14] http://www.cbe.org.eg/timeSeries.htm.

[15] Albeit diminishing, cf. Huizinga and Jonung (2005)

covert offshore assets. Inevitably, it is difficult to measure the scale and pattern of this flight capital, but it is undoubtedly large (Hanson, 2003 and references). Omission of offshore holdings will inevitably tarnish any analysis of household financial assets in developing countries.

2. Household financial assets and growth

Numerous econometric studies have established a causal link between financial depth and GDP growth.[16] The indications are that it is through its influence on the productivity of investment, rather than on its magnitude, that bank intermediation exerts its pro-growth effect, at least in higher income economies. It is the aggregate stock of bank credit to private sector borrowers, rather than the aggregate stock of money, that has been found to be the most robust explanatory variable in these regression analyses. But without mobilized funds for onlending, the banks would not be able to increase the volume of credit. Given the importance of household asset accumulation in easing the challenge for local banks to mobilize funds for onlending, household financial asset holdings do make a potentially significant indirect contribution to growth.[17]

It needs to be underlined that this extra link in the chain (from money to credit) is not a very tight one. For example, banks in much of Sub-Saharan Africa hold sizable excess reserves, either finding insufficient bankable lending opportunities to deploy the deposits which they have mobilized, or preferring to invest in high-yielding government securities in cases where domestic financing of government deficits in effect crowds out private lending; in this case additional household deposits are unlikely to be onlent. Furthermore, other countries have experienced the opposite phenomenon, where banks draw on external credit lines to finance more private lending than could be funded out of domestic resources. (Direct offshore borrowing by larger enterprises has also been observed in those cases.) Nevertheless in broad terms (and in an echo of the Horioka-Feldstein savings-investment correlation across countries), banking depth on the deposit

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[16] The finance and growth literature is surveyed in detail by Levine (2005), and summarized more briefly by Honohan (2004a). There remains some doubt as to whether this effect is more important at low or intermediate levels of income – or of financial development (Rioja and Valev, 2004; Aghion et al., 2005)
[17] The household dimension often not taken into account, so it is overall financial depth and not the household's share that is considered in the literature on finance and growth.

and private credit side remain strongly correlated across countries, suggesting that there is a link, even if it is not a rigid one. (Data for 138 countries are shown in Figure 4a: the correlation is +0.71).[18]

If the poor have limited access to credit, might this imply that financial development is pro-rich, disproportionately benefiting the wealthy? Or is it for outsiders and newcomers that a well-developed financial system most provides opportunities in terms of smoothing consumption, diversifying risk and overcoming indivisibilities in investment. An interesting but rather rarified theoretical literature has explored a variety of channels through which financial development could affect the evolution of income distribution . Generally speaking, these models pivot on credit constraints and on such aspects as collateral as a prerequisite for credit, and by such considerations as the possibility that improvements in financial intermediation will be seized first by the already wealthy. There has been no professional consensus on which of the various models, with their mutually contradictory conclusions, is most likely to fit reality.

Empirical evidence is accumulating, though, that financial development appears to be correlated not only with aggregate income growth, but also with lower poverty, even conditional on average income levels. Somewhat ironically, this seems to be the case more for financial depth indicators than for financial access indicators (see below).

Li et al. (1998) were the first to look at this kind of issue in a cross-country econometric framework. They found that income inequality (Gini coefficient) was lower in cross-sectional regressions with deeper financial systems. Honohan (2004a) showed that absolute poverty (proportion of the population below the $1 a day or $2 a day poverty line) was lower in deeper financial systems, even conditional on the mean income level achieved by the non-rich, and these findings are confirmed on an updated and expanded data set in Table 2. Beck et al. (2004) looked at income growth rates of the poor and

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[18] The outliers are (a) countries with a large nonbank sector (like the US or Norway) funded with liabilities that are not included in the liquid liabilities definition used for the deposit side; (b) offshore financial centers (like Malta) holding sizable foreign assets; (c) Countries with relatively large lending by the banking system to the government (like Japan).

found that they were disproportionately high where financial intermediary development was deep.

So there is a double effect on poverty: finance boosts mean income growth and it also promotes a more equal income distribution.[19]

So far, this apparent pro-poor twist to financial depth remains something of a black box. It could reflect the mechanism proposed by Rajan and Zingales (2003), whereby a developed financial system is one where availability of credit undermines the economic power of incumbent elites, thereby generally diffusing development more widely and opening more opportunities. More household saving in financial assets fuels this credit availability and represent an important anti-poverty force.

3. Does access to a bank account help reduce poverty?

Casting our eyes to the bottom of the pyramid, we need to remind ourselves that, for lower income groups, it is not a question of how much financial assets they choose to hold, and even less a question of how much they choose to borrow from the financial system. These households encounter barriers to accessing financial services.[20] In the advanced economies, this has led to a growing debate around the issue of financial exclusion. It is noted that a small but multiply deprived group – perhaps 10 percent of the adult population – do not have access to financial services such as a transactions account, or even a savings account, much less a loan from a formal intermediary or an insurance policy. In some cases product features, such as a high minimum cover for an insurance product, or heavy penalties for unauthorized overdrafts (hard for poor people to avoid if they are using checking accounts), or having a fixed address as a pre-requisite to open an account, represent material obstacles to use of such products. In other cases customers may be screened-out because of risk characteristics. Or rationalization of

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[19] These findings receive a nice confirmation from the results of Dehejia and Gatti (2005), who found a favorable cross-country effect of financial development on child labour.

[20] Including transactions services—an important dimension for such households which can be associated with the holding of balances in transactions accounts, but which will not be further discussed in this paper.

branches and service points may result in many poor customers having too far to travel to a branch to make an account worthwhile. Given the increasing extent to which full participation in economic life in the advanced economies depends on having an account at a financial intermediary, and given the material extra costs often imposed on non-account holders, several countries have adopted policies in recent years to reduce financial exclusion (Porteous, 2004; Carbo, Gardener and Molyneux, 2005).

In low and middle-income countries, though, 'exclusion' is normal for the bulk of the population, hence it becomes more natural to speak of broadening access to financial services rather than elimination of exclusion as the immediate goal. The exploding microfinance movement is driven by this motivation (Armendariz de Aghion and Morduch, 2005; Honohan, 2004b; Robinson, 2001). Microfinance pioneers have emphasized the very high rates of return that can be earned by the poor and the near-poor, especially in urban and peri-urban settings, resulting in a high demand for borrowings even at high interest rates. Some microfinance institutions work on a credit-only basis, funding themselves from charitable donors and other sources; some employ forced savings elements to the loan scheme. The modern trend is to emphasize deposits as well as loans as key tool for efficient financial management, whether they represent precautionary savings, or a means of accumulating capital. Transactions accounts are also important for receiving and making internal and international remittances between family members. And microinsurance is beginning to be a significant element in the microfinance movement.

Does access to financial services through deposit or loan accounts reduce poverty? Numerous anecdotes illustrate paths to relative prosperity being paved by such financial services. However, there is typically a large element of selection bias, both at the level of the individual client (with the more energetic likely to experience growing loan and deposit balances) and at the level of the village selected for establishment of a microfinance institution (sometimes this is a negative bias, as charitable sponsors seek out the more deprived villages). Furthermore, there can be displacement effects, with non-beneficiaries of microfinance suffering in local markets from the beneficiaries.

Despite an extensive quasi-promotional literature, detailed microeconometric analyses are, for these technical reasons, surprisingly non-committal about whether direct financial access has a major effect in reducing poverty (Honohan, 2004b).

What can be said at the macro level? Addressing this question evidently requires a cross-country data series on access. There are many dimensions to financial access, but to simplify matters, given the shortage of data, it is preferable to concentrate on one summary indicator. The most widely accepted indicator is the percentage of adults that have any type of account (including all types of transactions, savings or loan accounts) at a bank or other formal financial intermediary (World Bank, 2005). How many people in developing countries have access to a bank or other formal financial intermediary account? This empirical question is the subject of vigorous current investigation. Piecing together elements from several other studies (especially Beck et al. 2005; Christen et al. 2004; Peachey and Roe, 2006), Appendix 2 details the methodology of a new composite indicator available for over 150 countries and which has the merit of drawing on available data on the number of accounts in commercial banks, savings banks and various forms of microfinance institutions, and the average size of these accounts, as well as on the results of household surveys for the much more limited number of countries for which those are available.

While recognizing the shortcomings of the imputation procedures used to construct the composite indicator, as well as the limitations (outlined in the appendix) of the underlying data sources, the resulting dataset is nevertheless interesting. Appropriate econometric techniques can limit the consequences of random error.

Returning then to the question of whether financial access reduces poverty, we may use the new access data to obtain a macro cross-country perspective on this issue. Earlier work (using the CGAP data also described in Appendix 2) failed to find any significant cross-country correlation between the density of microfinance accounts and poverty rates (Honohan, 2004b). But given the extensive differences between the old data and the new composite series, it is worth repeating the experiment.

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In fact (Table 2) using any of the variants of the new data series presented in Appendix 2, we do find that access is correlated with poverty rates. This is true even of the microfinance-only data (referred to in the Appendix as the WSBI series – see regression 2.D). It is also true of the synthetic access percentages (2.E) or the composite series (2.F). But access percentages are, of course, strongly correlated with per capita income (Figure 8),[21] and since the latter is highly correlated with poverty rates, the more interesting question is whether access remains significant in a regression which also includes per capita income. In fact, when per capita income and other controls found to be significant in earlier work (see 2.A-C) are added to the specification, none of the access series retains significance (2.G).

Given the numerous deficiencies of the aggregate access data series, these negative macro cross-country results should not be taken as proving that access has little effect, but neither do they provide any strong evidence in favor of that hypothesis. Besides, the equation is clearly underspecified, the omission of relevant variables could mask or bias the estimated role of access. For instance, access might be more effective in the presence of other elements of the financial infrastructure such as credit registries or effective protection of property rights (Johnson et al., 2002; Djankov et al., 2006), or if financial liberalization is more advanced (Vlachos & Waldenström, 2005). The strength and presence of informal credit channels could also be a factor. Several other control variables reflecting for example education and labor market conditions deserve to be included also. Future work will report the results of further analysis along these lines.

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[21] In a regression of data on the summary access indicator for 147 countries, per capita income explains 60 percent of cross country variation. After exclusion of 5 outliers, Hong Kong, Lebanon, Luxembourg, Macao, China and United Arab Emirates, this jumps to 73 percent. It is likely that these five outliers should be omitted from most analyses with this data.

4. Allocation between different assets

Turning to the composition of the household financial portfolio, one distinctive stylized fact is that the rich hold a much riskier financial asset portfolio.[22] In making this judgment, we rely on the conventional classification that treats bank deposits (and other liquid assets largely free of default risk such as mutual funds solely invested in short-term money market assets and certain government-sponsored savings schemes) as largely risk-free.[23] US data (Figure 1) suggests that these display a wealth elasticity of close to unity.[24] Though subject to market risk, government bonds are also often classified with the risk-free; lower wealth deciles do not hold much of these, but even when they are included with the other risk-free assets, this broader category still displays a wealth elasticity little more than unity (constant share of wealth held in this form). Up to a certain level,[25] other risky financial assets have a wealth-elasticity much higher than unity: this reflects the declining share of total wealth held in non-financial form as wealth increases.

Extrapolating these observations to conditions in low-income countries, the share of risky financial assets in the national totals is likely to be smaller in poor countries. This indeed is confirmed by the observation that the ratio of aggregate national bank deposits to market capitalization is negatively correlated with per capita income – though the correlation is rather weak when attention when data is restricted to developing countries, because of outliers such as Israel, Jamaica and Slovenia (Figure 4b).

The pattern of increasing risk as wealth increases appears to be driven mainly by higher participation by rich households in the riskier assets. In other words, a higher proportion

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[22] Carroll (2002) has shown that a strong bequest motive could explain not only higher savings rates for high income households but also a higher risk-tolerance. Carroll also notes that rich households hold a relatively high share of non-financial business equity. He suggests that this is due to capital market imperfections inducing owners of technology or other productive assets to invest in their own enterprises. An alternative explanation is that true total Haig-Simon income from nonfinancial wealth is higher than measured. After all, what is wealth but capitalized Haig-Simon income?

[23] Even though subject to inflation risk as well as (in less advanced economies) a small but sometimes not insignificant default risk.

[24] Inferred from data on asset multiples of income for deciles of *wealth* in Kennickell (2003).

[25] To about the 90th decile of wealth in the US data: non-financial business equity assets represent an increasing share of the portfolios of the very rich.

of wealthy households hold risky financial assets, but among households with financial assets there is relatively little systematic variation in the ratio of risky financial assets to other assets as wealth increases. This can be seen in Figure 2 for six advanced economies (based on Guiso et al., 2002, compare their Tables 1.5 and 1.7), and for Korea. If this can be extrapolated to low-income countries, then it implies that patterns of ownership can be inferred from *participation* rates for different assets and products.

Participation data for risky financial assets are available for India (Kar et al., 2001) and it also shows a strong upward trend with income (Figure 2). Conditional on some holdings of risky assets, the share of risky in total financial assets rises slightly with income in China. It seems safe to assume that the unconditional share of risky assets increases with wealth in both China and India. Note that participation rates are much lower for all quintiles in India than for the advanced economies shown—as is surely the case in all developing countries.

But is household portfolio allocation efficient? There are various reasons to suppose that it is not. For instance, it is hard to rationalize the lack of diversification in most household portfolios. [26] The existence of an equity premium has contributed to a perception that risky assets form too low a share in household portfolios. Other kinds of portfolio allocation error are also conjectured, such as reliance on fixed-interest mortgages when choice of floating might place the household on a higher indifference curve. Reviewing this literature for the United States, Campbell (2006) concludes that "many households are reasonably effective investors, but a minority make significant mistakes," and that there may be a persistent cross-subsidy from naïve to sophisticated households.

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[26] For example, Kelly (1995) showed that the median US investor held just one equity stock.. More recently, Goetzmann and Kumar (2005) showed that, while diversification is increasing among the clients of a large US brokerage, many are still demonstrably insufficiently diversified and forgo substantial returns on a risk-adjusted basis, even after allowing for transactions costs. Bergstresser and Poterba (2004) discuss tax-inefficient portfolio allocation by US households.

Various explanations have been advanced for deviations from household portfolio efficiency, including inadequate financial education,[27] weak investor protection[28] and lack of trust (Guiso, Sapienza and Zingales, 2005).[29]

These issues have been little considered in the developing country context, and the limited data on age and education patterns are only moderately informative here. In practice, the use of non-cash financial assets is highly correlated with education levels in China, Ghana and Vietnam (but education in turn is correlated with income).[30]

In addition to advocating a more adventurous portfolio, financial planners often recommend that the riskiness of the household portfolio should decline as households near retirement – a form of turnpike theorem for investment planning. Looking, therefore at variations in the share of risky assets with age, no strong pattern emerges consistently across countries for which data is available. There is a hump-shaped pattern—as would be recommended by financial planners – for the US, the UK and Germany (Figure 2); but a trend increase for the Netherlands and (at least as far as participation is concerned) for India. The reduced share of risky assets held by older people in the US is less than would be recommended by financial planners (Ameriks and Zeldes, 2004).[31] There is no pronounced age-risk correlation for any of the developing countries for which we have data. Given that different age groups also represent different cohorts in these data, however, there is an identification problem in separating the effects of calendar time and age.

Supply conditions can also strongly affect household portfolio composition in developing countries including the choice between risky and safe assets, especially, but not only,

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[27] Lusardi and Mitchell (2006) found astonishing levels of financial ignorance when they added a module on financial education to a 2004 US survey on health and retirement issues.

[28] Giannetti and Koskinen (2004) present data for 26, mostly advanced, economies on the percentage of households holding equities; they find a positive correlation between these percentages and measures of investor protection.

[29] Rosen and Wu (2004) show that households with poor health status hold less risky assets.

[30] See Figure 3 for Ghana and Vietnam. For urban households in China, the share holding risky assets increases monotonically with education categories from 0.1% of those with below primary level to over 10% for those with post-graduate qualifications (CASS survey special tabulations).

[31] However, as Ameriks and Zeldes show, the apparent downward trend with old age is not confirmed by a more thorough multivariate microeconometric analysis of the US data—an observation which should act as a caveat for conclusions based on the simpler univariate approach adopted here.

when exchange controls limit international diversification. Legal, regulatory and tax policies can strongly affect the cost and availability to lower income households of such products as insurance and mortgage finance.

Equity is the prime risk product, and availability of traded equity has been greatly increased in many developing countries through privatization. This process has been enormously influential in increasing participation in equity markets (Boutchkova and Megginson, 2000), even though the voucher-based experiments towards popular capitalism in Eastern Europe were quite problematical (Ellerman, 2001). In turn the political commitment, which privatization to domestic households can represent, lowers political risk and increases stock market valuations which in turn can favorably affect growth (Oijen and Perotti, 2001).

Moving beyond the risky/safe dichotomy, available data is not only limited but hard to bring to a common base, given the different types of financial asset and financial product and the different ways in which information about holdings has been measured in different countries. One large cross-country database that avoids these difficulties is that assembled in recent years for the 25 member states of the European Union, which now includes some middle-income countries.[32]

The pattern of usage of different financial products found in the EU data (Table 3) suggests a fairly clear pecking order for some products, in that there is a fairly regular progression in the use of these products as overall financial access increases. (Here overall financial access is measured by the percentage of respondents who report use any of the products). By regressing for each product the percentage using that product on (the log of) overall financial access, we can estimate how sensitive each product is to overall

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[32] The European Commission have conducted financial surveys in member states almost every year since the late 1990s. The objective of the survey includes analysis of satisfaction with products, confidence in intermediaries and the effectiveness of cross-border competition. The data discussed here were collected in 2005 and reported in European Commission (2005). Thanks to Francesco Gaetano for the special tabulation in the final column of Table 3 showing usage of *either* checking or deposit account – also plotted in Figure 9. The European Commission stresses however, that the Eurobarometer survey was designed to elicit attitudes about the importance of various financial issues rather than measuring usage, therefore the statistics on usage should therefore be treated with caution. In particular, they caution that "the given response rate should not be misinterpreted as implying that the remaining proportion of respondents do not have the corresponding item."

usage. The results are summarized in Table 4 and Figure 10. The intercept represents the estimated usage for a country where there is 100 percent access.[33] At that point, checking account usage is projected at 78 percent,[34] and holdings of bonds at 7 percent. Projected usage at 50 percent access is also shown in Table 4. Checking and deposit accounts and their associated cards are in the first rank for usage. Life assurance comes next, followed at some distance by the various loans and more complex investment instruments. Check-book, overdraft and occupational pensions have much higher variance of usage, little of which can be explained by variations in overall access: instead these should be seen as system-specific rather than generic products.

5. Concluding remarks

Financial asset holdings by households are highly concentrated: in the US one-half of households own about 97 percent of financial assets. The savings they represent are pooled and transformed by financial intermediaries and markets, enhancing their risk and return. Although firms are also providers of funds to intermediaries and markets, the savings of prosperous households ultimately represent a large fraction of the resources employed by the financial sector in its provision of risk-reduction services and investable funds. As such, they are a key ingredient in the growth-promoting process of financial intermediation.

Data on the financial asset holdings of households in developing countries are very sparse indeed. The quality of data for the handful of countries for which systematic surveys have been conducted is suspect, with indications that asset holdings of the highest income groups are systematically understated.

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[33] When a country reaches 100 percent access, usage of products may continue to grow – attempts to deal with this by adding a term in per capita GDP does not prove to yield precisely estimated coefficients on this rather small dataset.

[34] Checking accounts and deposit accounts appear to be substitutes in the sense that inclusion of the percentage using deposit accounts results in a much improved fit; the estimated coefficient on deposit account usage is –0.52. No other substitutes were found in the data.

For low-income countries, the relevant question for poor households is not how much financial assets they have, but whether they have access to financial intermediaries at all. We have drawn on and synthesized recent work by several authors using information provided by banks and micro-finance institutions in combination with household survey data to produce estimates of access percentages for almost 150 countries. These estimates can be progressively refined as the results of a new wave of access surveys currently under way or planned become available.

The new access percentages are negatively correlated across countries with poverty rates, but the correlation is not a robust one and loses significance in multiple regressions that include mean per capita income. Thus the supposed anti-poverty potential of financial access remains econometrically elusive.

Data for developing countries is insufficiently rich to assess whether asset choice by households is consistent with rational choice, a question on which there has been much discussion for advanced economies. Once again, it is more a question of whether households actually use any of a range of different types of financial instruments, than of whether they have chosen the optimal quantities of each in their portfolio. Analysis of data from the EU-25 suggests a ranking of different financial instruments and products in terms of the level of income at which each will be widely used: checking and deposit accounts and their associated cards come first, followed by life assurance and then loans.

Appendix 1: A few definitions

As the paper concentrates exclusively on financial assets, it is desirable to clarify what is included and what excluded by this convention.

Financial assets represent contractual claims on other agents and are as such differentiated from other physical or tangible assets such as land, buildings and machinery. While the value of a financial asset may be considered to derive from the wealth of the issuer, attempts to trace the value of a financial asset through a sequence of such claims to an underlying nonfinancial asset are in practice blurred and dissolved by the pooling of claims through intermediaries and by the contingent nature of such derived claims.

Financial assets include cash (notes and coin), deposits at banks and other intermediaries, tradable equities, government and corporate bonds, and holdings of managed funds. A wide range of variants and derivatives of these basic financial assets are also included, and these have become increasingly important in advanced economies. The three main areas of ambiguity in drawing the line between financial and non-financial assets are in the area of insurance, pensions and equities.

For statistical purposes, the only *insurance* claims that are customarily measured as financial assets are life assurance policies, and they are included only to the extent of their surrender (cash) value. This may substantially under-represent the discounted present value of the expected benefits from the policy.

As to *pension* and retirement fund claims, the market value of defined contribution funds are generally treated as a financial asset, but the value of occupational defined benefit funds and any expectation of social security or social assistance pensions typically is not, at least partly because of difficulties of measurement.

For *equities*, only those that are freely tradable (and thus excluding ownership claims on enterprises that have not adopted the procedures for public tradability of their equities) are included as financial assets. The idea here is that a share in a privately-owned company is quite close to direct ownership of part of the company's assets and as such ought to be excluded. A difficulty here is that many listed companies are controlled by a small group of shareholders – perhaps a family – either through a majority stake, or a sufficiently large minority stake, perhaps involving a pyramidal structure of ownership. While these insider stakes will normally be treated as financial assets, given that identical holdings by non-controlling shareholders are clearly financial assets, the degree of control over the assets of the company which they represent is close to being non-financial in nature.

Of these three frontier categories, pension and equity holdings are among the most rapidly evolving asset classes, and have been the subject of far-reaching policy initiatives in many countries related in particular to changing longevity and privatization of public enterprises.

Appendix 2: A New Composite Series on Household Access to Financial Services

This Appendix discusses some recent contributions to measuring access of households to various forms of intermediary accounts, and proposed a new composite cross-country indicator of the percentage of the adult population with access to some intermediary account. The new series has the advantage of wide coverage – almost 140 countries – and the drawback of relying for many countries on some rather shaky imputations.

In recent contributions, two basic approaches have been used to get to grips with the problem of measuring overall financial access (Honohan, 2005). One is to go directly to households and survey their usage, whether as part of a wider household survey or a dedicated financial access survey. The other is to make inferences from data in the number of intermediary accounts. The annex proposes a method of using overlaps between the country coverage of the different approaches to arrive at access estimates for 162 countries – or almost three times the number of countries for which there is direct household survey data.

The first method of measuring access, namely the use of sample surveys of households or individuals, is the most satisfactory from a conceptual point of view. The surveys that have produced data here include general household surveys such as the LSMS series (which can include a savings module asking questions about the holding of savings) and specialized financial access surveys, such as the Finscope series which began in Southern Africa and are currently being rolled out in several other African countries. The series of Eurobarometer surveys in the European Union also ask such questions (cf. European Commission, 2005). Unfortunately the number of countries covered by household survey data remains modest, and there are indications of problems with the reliability some of the data collected.[35]

The second method is to collect data on the number of accounts maintained at the financial institutions. This has been done in respect of *microfinance* in 148 developing countries by Christen et al. (2004) of CGAP, building on earlier compilations for more limited groupings. They include not only specialized microfinance institutions, savings and credit cooperatives, credit unions and other socially-oriented intermediaries (including some microfinance-oriented commercial banks) and they term these 'alternative' intermediaries.[36] More recently, Peachey and Roe (2006) have augmented the CGAP database with figures for a number of *additional savings banks* (members of the World Savings Banks Institute), which had not been included by Christen et al. We describe this augmented set as the "WSBI database". The additions are important. Many of the institutions added by Peachey and Roe, most of them postal savings banks, have very wide outreach by national standards: in 27 countries they represent more than 50 percent of the number of accounts recorded. Furthermore, the additional banks include

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[35] The Eurobarometer surveys have been repeated on a roughly annual frequency with some startling year-to-year jumps in the responses, despite only small change in the questions answered.
[36] Christen et al. define their coverage as including intermediaries that have a "double bottom-line", reflecting social (access to finance) as well as strictly commercial objectives. They include government-owned development banks and savings banks.

two very large ones (the Industrial and Commercial Bank, ICBC, of China and Sberbank, Russia, with 0.43 and 0.23 billion accounts respectively); their inclusion accounts for the fact that the augmented dataset contains more than twice as many accounts – 1.46 billion instead of 0.67 billion – thereby sharply revising aggregate access estimates.

Figure 5 presents the distribution across countries of number of microfinance accounts per 100 adult population using the WSBI series. It also shows the same for microfinance accounts that are not savings bank accounts (based on the CGAP numbers). It suggests a rather better access picture than indicated in earlier work, and in particular shows that ignoring the large government-sponsored savings banks leads to a considerable understatement of the number of bank accounts (though it should be noted that many of these savings banks do not offer credit services to individual customers);

A parallel exercise for *banks* was conducted mainly through a survey of banking regulators (Beck et al. 2005). Data on the number of deposits at 1999-2000 was obtained for 45 countries – 35 of them developing countries. However, this survey covers only those institutions regarded as "deposit money banks" and as such does not cover most microfinance institutions.

A number of difficulties arises in moving from these two databases to a reliable indicator of the proportion of households with financial access. For one thing, there is unfortunately an overlap between the coverage of the two databases on numbers of accounts, as some commercial banks are included in the WSBI sample, and elimination of this overlap has not yet proved feasible. Then again there is the problem of inferring the number of distinct and active accountholders from data on numbers of accounts, as many individuals have multiple accounts. On the other hand, some accounts are recorded even though they have long been inactive. There is sure to be a large variation from country to country and between different types of banks in the degree to which these problems result in the aggregate number of accounts exceeding the number of individuals with accounts. The typical individual in more advanced financial systems likely holds a greater number of accounts than in less advanced economies. And there are widely differing practices with regard to multiple accounts. For example, the ICBC – with the largest number of individual accounts of any bank, is currently carrying out a campaign to consolidate multiple accounts.[37]

There are other loose ends. For instance, while the accounts at ICBC are included in the WSBI data, the 146 million active personal deposit accounts at another large Chinese institution, the China Commercial Bank are not, essentially because it is not a member of the WSBI. Both of these banks would be included in the concept of "commercial banks"

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[37] Interestingly, the bank's notice to customers dated October 18, 2005, urging them to close or merge accounts containing small balances, identifies no fewer than 11 classes of account which should *not* be closed.

employed by Beck et al. 2005 for their survey, though data for China has not been included in that survey.[38]

Given these numerous difficulties it is heartening to discover that data on bank account numbers and on average bank account size (as a proportion of GDP) are quite closely correlated with household survey-based data on access percentages (Table A1, regressions A and B; and Figure 6). The log-linear relationship is close enough to suggest using extrapolating fitted values for countries in which there is no household survey data available. Using the bank account database, this allows synthetic access percentages to be derived for about 45 countries. Even more encouraging, for countries where both exist, the bank account numbers are quite highly correlated with – though not equal to – the WSBI numbers (Table A1, regression L). Thus, where the number of bank accounts is not known but the WSBI numbers are, we can use the fitted relationship to compute a substitute regressor. Using this substitute, we obtain G, which shows that the relation between accounts numbers and household survey data holds up well on a much wider sample. The coefficient values from G can then be used to approximate access percentages for all 138 countries in the WSBI database. As a further refinement, noting also the correlation between the deposit size data and GDP per capita (regression M) one can proceed in an analogous way using the fitted values from M as regressors in J, whose coefficient values in turn generates an alternative approximation to the access percentages. We call this alternative the ***synthetic*** access percentage.

In notation, let m_i is the ratio of MF accounts and b_i the ratio of bank accounts to adult population in country i; let h_i be the household survey-based percentage access, z_i the average deposit size and y_i per capita GDP.

Let $\hat{\alpha}_k$ be the fitted values in a log-linear regression of b on a constant term and m, and $\hat{\beta}_k$ the fitted values in a regression of z_i on a constant and y.

Then, let $\hat{b}_i = b_i$ for countries where data on b_i is available, $\hat{b}_i = \hat{\alpha}_0 + \hat{\alpha}_1 \log(m_i)$ otherwise; $\hat{z}_i = z_i$ for countries where data on z_i is available, and $\hat{z}_i = \hat{\beta}_0 + \hat{\beta}_1 y_i$ otherwise.

Let $\hat{\gamma}_k$ be the fitted coefficient values from a log-linear regression of h on a constant, $\hat{b}$ and $\hat{z}$.

The ***synthetic*** access percentages are then obtained by computing $\hat{\gamma}_0 + \hat{\gamma}_1 \log \hat{b} + \hat{\gamma}_2 \log \hat{z}$.

A final adjustment is to replace this last mentioned synthetic access data with survey-based data where available. The result[39] is the ***composite*** indicator tabulated in Table 1, and on which Figures 5, 7 and 8 are based.

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[38] The household survey percentages used here are drawn from the compilation in Claessens (2005), the original surveys were conducted with various methodologies and at various dates between 1988 and 2004. Including the date of the survey in the various regressions changes little.

[39] In addition, a final adjustment was made to prefer the predictions from B to those from J, where the former was larger. I.e. the WSBI data was not allowed to result in a lower composite estimate than would

Figure 5 also shows the deciles for the synthetic and composite access indicators. Note that the synthetic indicator is distributed more evenly than the basic WSBI accounts numbers, partly because of the use of a logarithmic transformation of account numbers, which is preferred by the data (as is indicated by regression F) and which is consistent with the plausible idea that, as deposit account numbers grow, access percentages do not grow proportionately. However, the spread of the actual distribution out of sample is likely to be also understated by the deciles shown, given that the fitted value has a much lower standard deviation than the actual within sample.

Despite the numerous shortcomings of the composite indicator, it has the great merit of distilling information from a variety of different sources and placing it on a common basis. No doubt the accuracy of the imputation for any given country may be highly questionable, but it can represent a first approximation to be revised as new data become available for each country. Furthermore, as a cross-country dataset, it has certainly potential for use in cross-country regression analysis, where econometric techniques can minimize the impact of stochastic errors.

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be obtained from using the bank data only. As more refined information on specific countries is obtained, it is envisaged that this series will be updated.

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Table 1: *Composite Measure of Access to Financial Services*

Country		Code	Value	Country		Code	Value	Country		Code	Value
Albania	b	ALB	34	Germany	s	DEU	97	Panama		PAN	46
Algeria		DZA	31	Ghana		GHA	16	Papua New Guinea	b	PNG	8
Angola		AGO	35	Greece	s	GRC	83	Paraguay		PRY	30
Antigua & Barbuda		ATG	48	Grenada		GRD	37	Peru		PER	26
Argentina	b	ARG	28	Guatemala	s	GTM	32	Philippines		PHL	26
Armenia	s	ARM	9	Guinea		GIN	20	Poland	s	POL	66
Austria	s	AUT	96	Guyana	s	GUY	14	Portugal	s	PRT	84
Azerbaijan		AZE	17	Haiti		HTI	15	Romania		ROM	23
Bahamas, The		BHS	53	Honduras	B	HND	25	Russian Federation		RUS	69
Bangladesh		BGD	32	Hong Kong, Chn		HKG	[38]	Rwanda		RWA	23
Barbados		BRB	56	Hungary	S	HUN	66	Samoa		WSM	19
Belarus		BLR	16	India		IND	48	Saudi Arabia		SAU	62
Belgium	s	BEL	97	Indonesia		IDN	40	Sao Tome & Principe		STP	15
Belize		BLZ	46	Iran, Isl. Rep.		IRN	31	Senegal		SEN	27
Benin		BEN	32	Iraq		IRQ	17	Seychelles		SYC	41
Bermuda		BMU	48	Ireland	s	IRL	88	Sierra Leone		SLE	13
Bhutan		BTN	16	Italy	s	ITA	75	Singapore	b	SGP	98
Bolivia		BOL	44	Jamaica		JAM	59	Slovak Republic		SVK	83
Bosnia & Herzeg.		BIH	17	Jordan	b	JOR	37	Slovenia		SVN	97
Botswana		BWA	47	Kazakhstan		KAZ	48	Solomon Islands		SLB	15
Brazil	s	BRA	43	Kenya	s	KEN	10	South Africa		ZAF	46
Bulgaria	s	BGR	56	Korea, Rep.		KOR	63	Spain	s	ESP	95
Burkina Faso		BFA	26	Kyrgyz Republic		KGZ	1	Sri Lanka		LKA	66
Burundi		BDI	17	Latvia		LVA	64	St. Kitts and Nevis		KNA	49
Cambodia		KHM	20	Lebanon	b	LBN	[79]	St. Lucia		LCA	40
Cameroon		CMR	24	Lesotho		LSO	17	St. Vincent & Gren.		VCT	45
Cape Verde		CPV	52	Liberia		LBR	11	Sudan		SDN	15
Cent African Rep.		CAF	19	Libya		LBY	27	Suriname		SUR	32
Chile		CHL	60	Lithuania	s	LTU	70	Swaziland		SWZ	35
China		CHN	42	Luxembourg	s	LUX	99	Sweden	s	SWE	99
Colombia	s	COL	41	Macao, China		MAC	[14]	Switzerland	b	CHE	88
Comoros		COM	20	Macedonia, FYR		MKD	20	Syrian A.R.		SYR	17
Congo, Rep.		COG	27	Madagascar		MDG	21	Tajikistan		TJK	16
Costa Rica		CRI	29	Malawi		MWI	21	Tanzania		TZA	5
Cote d'Ivoire		CIV	25	Malaysia	b	MYS	57	Thailand		THA	59
Croatia		HRV	42	Mali		MLI	21	Timor-Leste		TMP	13
Cuba		CUB	45	Malta	s	MLT	90	Togo		TGO	28
Cyprus	s	CYP	85	Mauritania		MRT	16	Trinidad & Tobago		TTO	53
Czech Republic	s	CZE	85	Mauritius	b	MUS	60	Tunisia		TUN	42
Denmark	s	DNK	99	Mexico	s	MEX	25	Turkey	b	TUR	49
Dominica		DMA	66	Moldova		MDA	13	Uganda		UGA	20
Dominican Rep.		DOM	29	Mongolia		MNG	30	Ukraine		UKR	24
Ecuador	s	ECU	35	Morocco		MAR	39	United Arab Emirates	b	ARE	[33]
Egypt		EGY	41	Mozambique		MOZ	12	United Kingdom	s	GBR	91
El Salvador		SLV	26	Myanmar		MMR	19	United States	s	USA	91
Eritrea		ERI	12	Namibia	s	NAM	28	Uruguay		URY	42
Estonia	s	EST	86	Nepal		NPL	20	Uzbekistan		UZB	16
Ethiopia		ETH	14	Netherlands		NLD	100	Venezuela	b	VEN	28
Fiji	b	FJI	39	Nicaragua	s	NIC	5	Vietnam		VNM	29
Finland	s	FIN	99	Niger		NER	31	West Bank & Gaza		WBG	14
France	s	FRA	96	Nigeria		NGA	15	Yemen, Rep.		YEM	14
Gabon		GAB	39	Norway	b	NOR	84	Yugoslavia, FR		YUG	21
Gambia		GMB	21	Oman		OMN	33	Zambia		ZMB	15
Georgia		GEO	15	Pakistan	b	PAK	12	Zimbabwe	b	ZWE	34

Source: Author's calculations based on Beck et al. (2005), Christen et al (2004), Claessens (2005), European Commission (2005), Peachey and Roe (2006). For definitions and method see Appendix 2. Notes: s means household survey data used; b means fitted data using bank deposit numbers and not WSBI numbers. [Square bracketed data are considered less reliable]. This is Mark IIc version of the data series: As more refined information on specific countries is obtained, it is envisaged that this series will be updated.

Table 2. *Poverty and Financial Access*

This table shows regressions relating the $1 per day poverty percentage to financial access percentages across countries

Equation:	2.A		2.B		2.C		2.D		2.E		2.F		2.G	
	Coeff.	t-Stat	Coeff.	t-Stat	Coeff.	t-Stat	Coeff.	t-Stat	Coeff.	t-Stat	Coeff.	t-Stat	Coeff.	t-Stat
Constant	173.6	**11.6	170.6	**12.8	137.8	**8.5	31.4	**6.7	94.5	**6.1	61.1	**5.7	140.0	**8.5
GNI per cap (log)	-18.8	**10.4												
GNI per cap lower 90% (log)			-19.2	**11.4	-17.5	**10.4							23.4	**8.8
Share of top 10%					0.574	**3.3							0.948	**3.1
Access (log)							-4.4	**2.7	-22.1	**4.8	-12.4	**3.9	-2.0	0.8
Which measure?							WSBI		Synth		Comp		Comp	
R-squared / NOBS	0.546	91	0.598	89	0.643	89	0.079	88	0.212	88	0.151	89	0.645	87
Adjusted R-squared	0.541		0.593		0.634		0.068		0.203		0.141		0.632	
S.E. of regression	15.2		14.2		13.5		21.9		20.3		21.0		13.7	
Log likelihood	-375.7		-361.5		-356.2		-395.5		-388.7		-396.2		-348.8	

** and * indicate significance at the 1% and 5% levels, respectively.

Cross section: all available countries: Note GNI per cap is measured at PPP ;

WSBI is the data in Peachey and Roe (2006); *Synth(etic)* is the predicted share using the estimated regression J in Table A1; *Comp(osite)* is based on household survey data where available, otherwise *Synth* (see Appendix 2 – Mark IIa of the composite series was used here).

Source for poverty and inequality measures: GPID; source for GNI: WDI.

Table 3: *Use of Different Financial Products, European Union Countries, 2005, %.*

		access	checking a/c	credit card	deposit a/c	debit card	life assur-ance	check book	over-draft	occup-ational pension	mort-gage	shares	collective investment	car loan > 1 year	other loan > 1 year	bonds	none	don't know	Check. *or* dep. a/c
EU25 median		90	73	30	29	35	30	7	12	18	9	8	6	6	8	2	9	1	78
EU25 mean		89	71	34	30	30	28	25	19	17	16	10	10	7	7	5	10	1	80
Belgium	BE	97	93	43	68	38	64	6	27	27	25	17	14	9	4	7	1	2	95
Denmark	DK	99	47	48	26	39	59	20	43	44	40	29	8	16	17	19	1	0	62
Germany	DE	97	92	23	41	40	28	6	24	19	9	11	16	7	8	5	2	1	94
Greece	EL	83	10	26	59	15	28	2	2	5	8	4	2	5	5	1	17	0	65
Spain	ES	95	50	36	54	18	30	8	3	11	19	6	5	7	3	1	4	1	89
France	FR	96	87	62	21	35	10	75	38	11	23	8	10	10	8	2	2	2	89
Ireland	IE	88	57	40	36	36	42	29	16	19	22	10	4	23	12	5	11	1	72
Italy	IT	75	62	20	9	10	6	24	4	4	6	6	6	3	3	4	24	1	70
Luxembourg	LU	99	74	65	29	38	59	9	39	18	25	18	16	17	11	6	1	0	85
Netherlands	NL	100	95	43	30	45	65	7	4	26	49	21	23	3	3	7	0	0	96
Austria	AT	96	73	28	56	39	61	5	31	25	5	7	6	9	11	4	2	2	84
Portugal	PT	84	74	20	12	21	43	35	4	6	10	4	1	4	3	2	14	2	77
Finland	FI	99	82	42	31	22	39	1	8	11	23	17	14	13	11	2	1	0	87
Sweden	SE	99	75	64	50	54	51	9	18	49	49	39	57	16	12	14	1	0	85
United Kingdom	UK	91	76	51	37	40	50	64	38	31	30	19	9	10	14	10	7	2	83
Cyprus	CY	85	46	34	40	33	8	28	12	2	13	19	0	17	18	2	14	1	71
Czech Republic	CZ	85	73	14	14	36	16	0	20	30	5	3	3	6	9	1	14	1	79
Estonia	EE	86	74	20	15	16	25	1	4	31	4	4	1	3	8	0	11	3	78
Hungary	HU	66	49	10	9	24	12	1	12	20	3	1	1	6	3	1	33	1	54
Latvia	LV	64	29	29	7	10	26	2	10	11	5	2	0	3	9	1	35	1	32
Lithuania	LT	70	42	14	9	9	30	1	1	15	0	2	1	1	5	0	25	5	47
Malta	MT	90	53	30	46	26	69	32	6	7	9	13	6	5	3	9	9	1	75
Poland	PL	66	46	14	8	26	5	3	12	9	2	2	2	3	6	2	32	2	49
Slovakia	SK	83	62	13	20	37	7	2	8	18	4	3	3	5	7	2	17	0	74
Slovenia	SI	97	87	35	8	37	56	9	40	8	1	24	8	6	10	2	3	0	90
Predicted @ 50% access			50	21	18	22	22	10	11	14	6	5	2	5	7	2			
Predicted @ 100% access			78	44	40	49	38	24	20	23	25	18	15	11	10	7			

Source: Eurobarometer 230 (and special tabulation), European Commission (2005); and author's calculations. "Access" means reporting at least one product.

Table 4: *Analysis of Product Semi-elasticities with Respect to Overall Access*

	constant	access	*t-stat*	*RSQ*
Checking a/c	0.78	0.96	*3.9*	*0.40*
Credit card	0.44	0.79	*4.4*	*0.46*
Deposit a/c	0.40	0.77	*3.4*	*0.33*
Debit card	0.49	0.94	*3.8*	*0.39*
Life assurance	0.38	0.57	*4.2*	*0.43*
Overdraft	0.24	0.48	*2.6*	*0.23*
Checkbook	0.20	0.30	*1.1*	*0.05*
Occupational pension	0.23	0.32	*1.9*	*0.13*
Mortgage	0.25	0.64	*3.8*	*0.38*
Shares	0.18	0.47	*4.3*	*0.45*
Collective investments	0.15	0.43	*2.9*	*0.27*
Car loan over 1 year	0.11	0.20	*2.7*	*0.24*
Other loan over 1 year	0.10	0.10	*1.6*	*0.10*
Bonds	0.07	0.16	*2.6*	*0.23*

Note: The table shows the estimated intercept and coefficient on log(access)
in a regression of the percentages using each product across the EU25.
Source: Author's calculations based on the data in Table 3

Table A1: *Relating Survey-based Access Percentages and Information on Account Numbers*

Regressions A-F in this table relate survey-based estimates of the percentage of households who have bank accounts (*Survsave*) to estimates of the number of bank accounts per head of population, average bank deposit size, and the number of accounts at "alternative" financial intermediaries per head of population. Regressions G-K repeat this substituting fitted values for the first two explanatory variables from Regressions L and M. Regression L relates the number of bank accounts per head of population to the number of accounts at "alternative" financial intermediaries. Regression M relates average bank deposit size to GDP per capita.

Equation:	A1.A		A1.B		A1.C		A1.D		A1.E		A1.F	
Dep. var.	survsave		survsave		survsave		survsave		survsave		survsave	
Explanatory var.	Coeff.	t-Stat	Coeff.	t-Stat	Coeff.	t-Stat	Coeff.	t-Stat	Coeff.	t-Stat	Coeff.	t-Stat
Constant	-115.0	**5.6	186.1	**9.5	-63.0	1.0	-60.5	0.9	14.6	**3.2	8.17	1.7
Log (Bank accs per pop)	25.2	**8.1	18.8	**8.0	11.8	**2.9	11.5	2.1			0.0190	**4.9
Log (Average deposit size)			14.0	**4.9	2.4	0.4	2.2	0.3			0.00362	**3.5
Alternative accs per pop							0.017	0.0	0.701	**3.1		
Omitted observation					Adv		Adv		Adv			
R-squared / NOBS	0.814	17	0.931	17	0.601	10	0.601	10	0.315	23	0.895	17
Adjusted R-squared	0.801		0.921		.486		0.401		0.282		0.880	
S.E. of regression	15.8		10.0		9.5		10.2		14.1		12.3	
Log likelihood	-70.0		-61.5		-34.9		-34.9		-92.5		-65.1	

** and * indicate significance at the 1% and 5% levels, respectively.

NB: regression 1F uses the *levels* rather than the logs of {Bank accs per pop} and {Avg deposit size}

Omitted observations: regressions C-E omit advanced economies.

Table A1 (Continued)

Equation:	A1.G		A1.H		A1.J		A1.K		A1.L		A1.M	
Dep. var.	survsave		survsave		survsave		survsave		Depaccs		Depsize	
Explanatory var.	Coeff.	t-Stat	Coeff.	t-Stat	Coeff.	t-Stat	Coeff.	t-Stat	Coeff.	t-Stat	Coeff.	t-Stat
Constant	-115.9	**6.9	-121.9	**8.3	-188.2	**9.5	-151.0	2.0	156.7	*2.5	1356	*2.8
Log (Bank accs per pop-synthetic)	25.2	**9.5	26.4	**11.2	18.2	**7.3	15.4	*2.5				
Log (Avg deposit size-synthetic)					14.8	**4.7	11.7	1.6				
Alternative accs per pop							0.131	0.4	12.9	**5.9		
GDP per cap											0.280	**9.4
Omitted observation			ROM						ROM			
R-squared / NOBS	0.761	30	0.823	29	0.869	30	0.485	23	0.762	13	0.822	21
Adjusted R-squared	0.753		0.817		0.859		0.403		0.740		0.813	
S.E. of regression	15.2		13.2		11.5		12.9		178.3		1735	
Log likelihood	-123.2		-115.0		-114.2		-89.2		-84.7		-185.4	

** and * indicate significance at the 1% and 5% levels, respectively.

The synthetic explanatory variables are the fitted values from equations 1L and 1M

Omitted observations: regressions H and L omit the outlier Romania
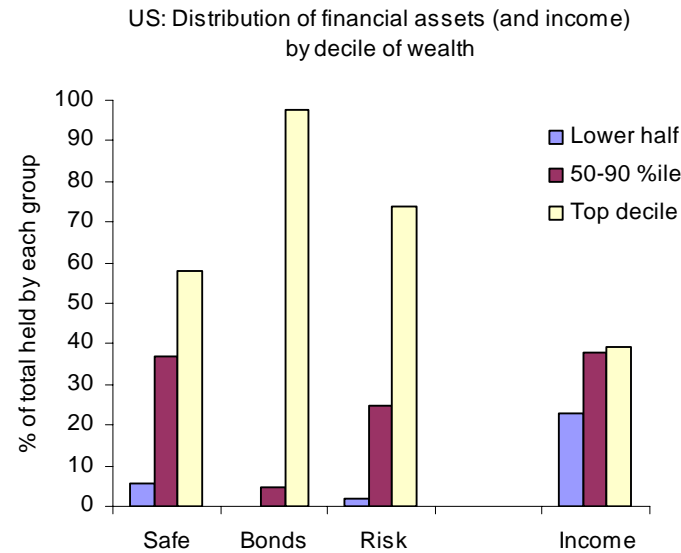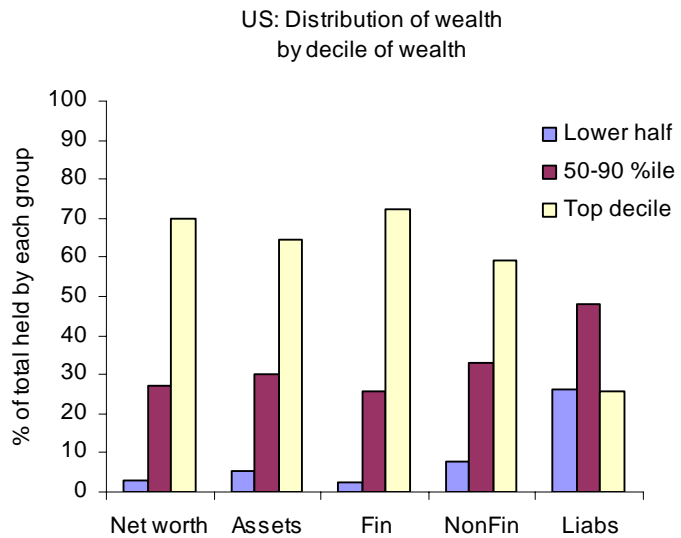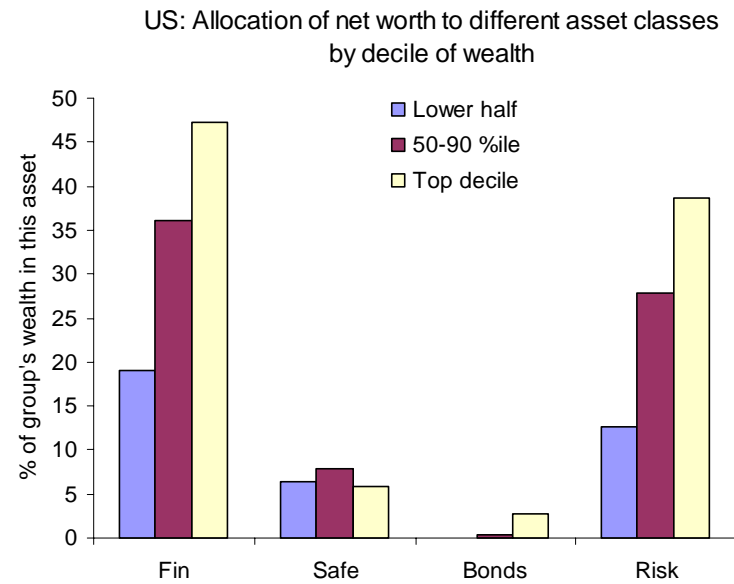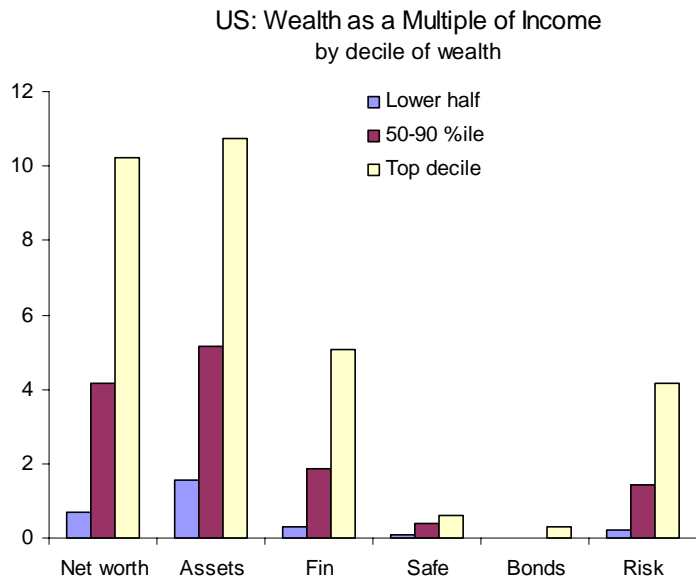
Figure 1: Characteristics of the distribution of financial and other household asset holdings: USA, 2001. Source: Based on data in Kennickell, 2005. Example: (a) net worth of the top wealth decile exceeds 10 times their income. (b) top decile holds 47 peer cent of its wealth in financial assets. (c) top decile holds 70 percent of systemwide net worth
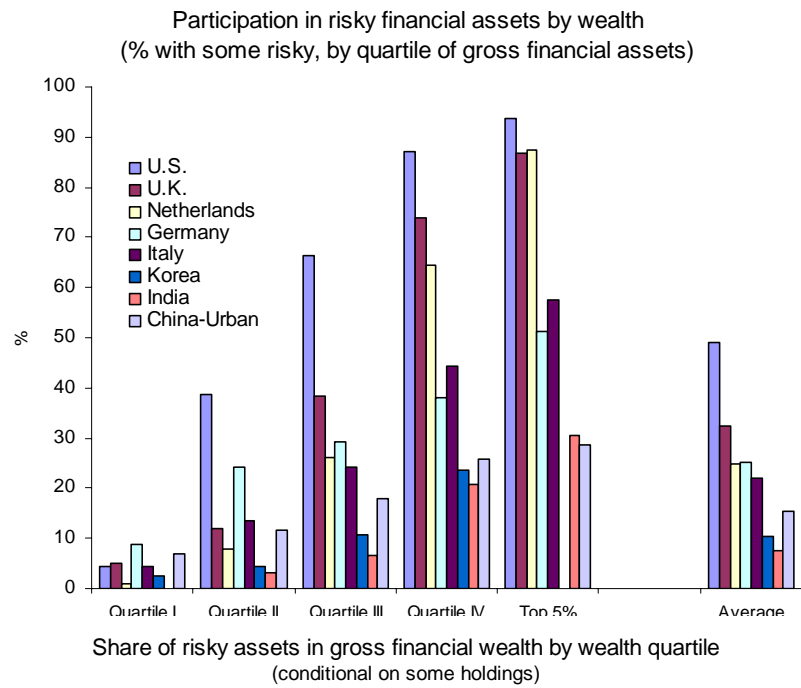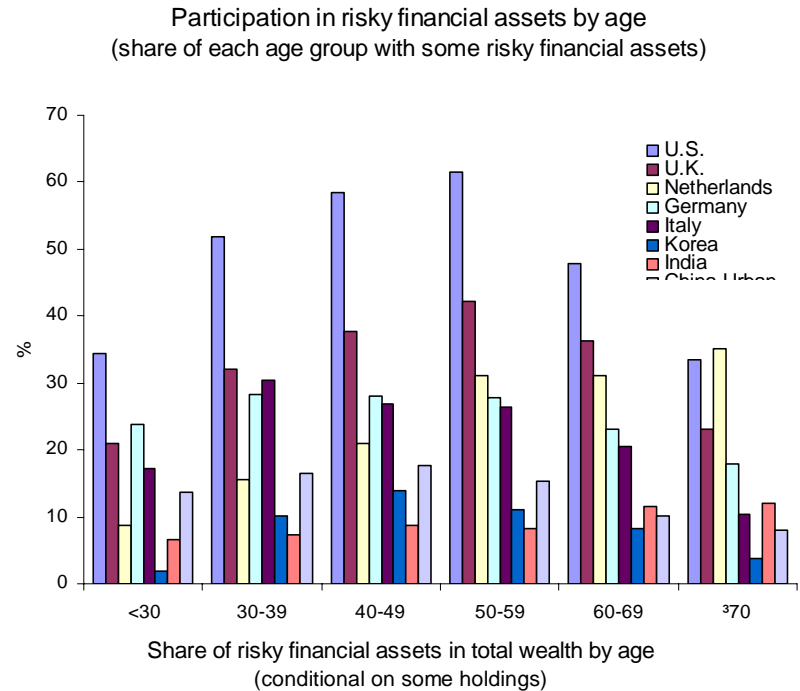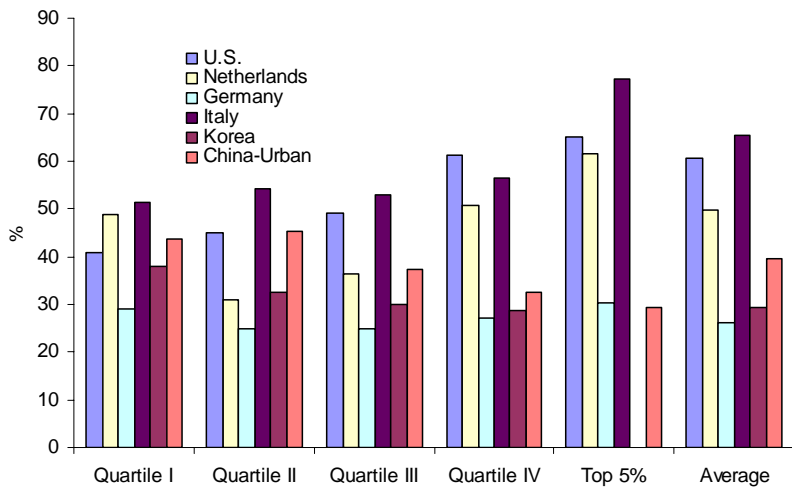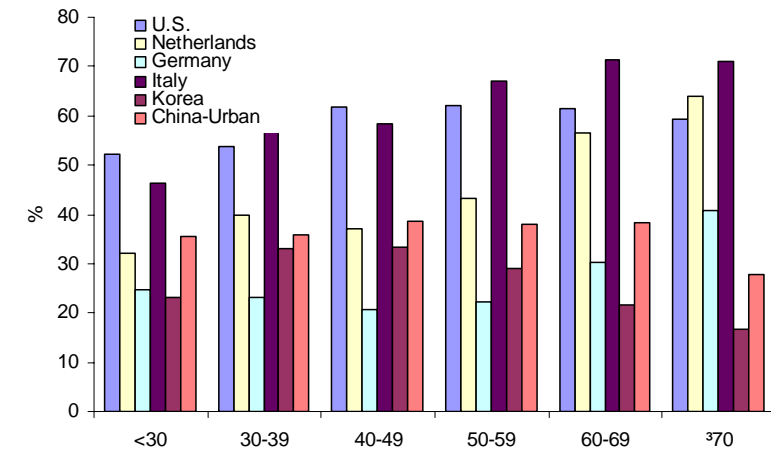
Figure 2: *Use and Portfolio Share of Risky assets in Total Financial Assets by Financial Wealth and Age, Selected Economies, 1990s.*
Source: Based on data in Guiso et al.(2002); Kar et al. (2001); for China: special tabulations by Ding Sai based on CASS 2002 survey (Li and Zhao, 2006); for Korea special tabulations by JaeChil Kim of KSRI based on the Korea Household Income and Expenditure Survey of the National Statistics Bureau. Note for India and Korea the quartiles are income, not wealth.

Ghana: Financial assets by consumption percentile

Ghana: Distribution of financial assets
(savings balances; by quartile of consumption)

Ghana: Financial assets by education

Ghana: Financial assets by age
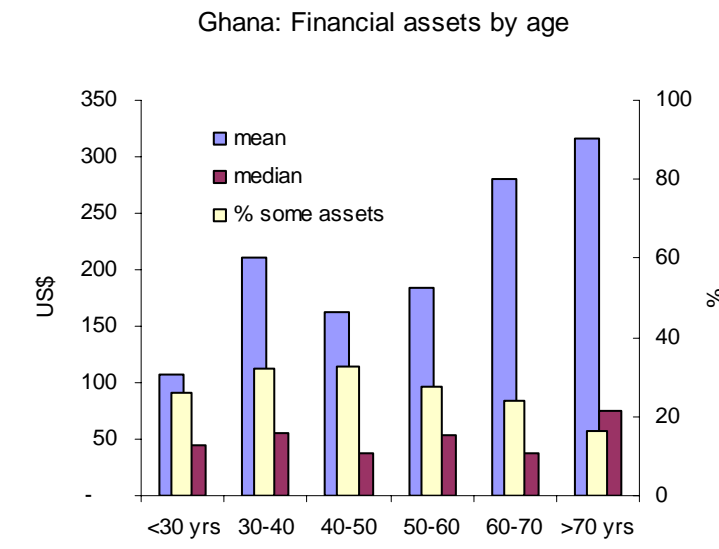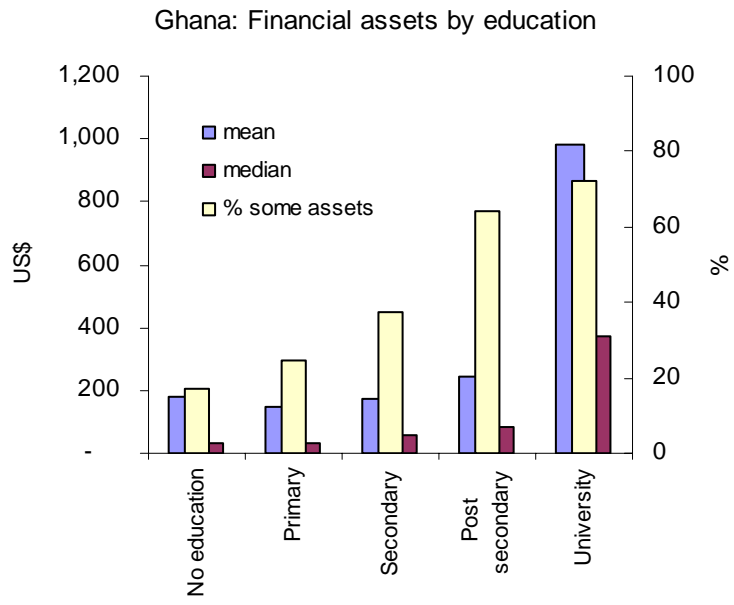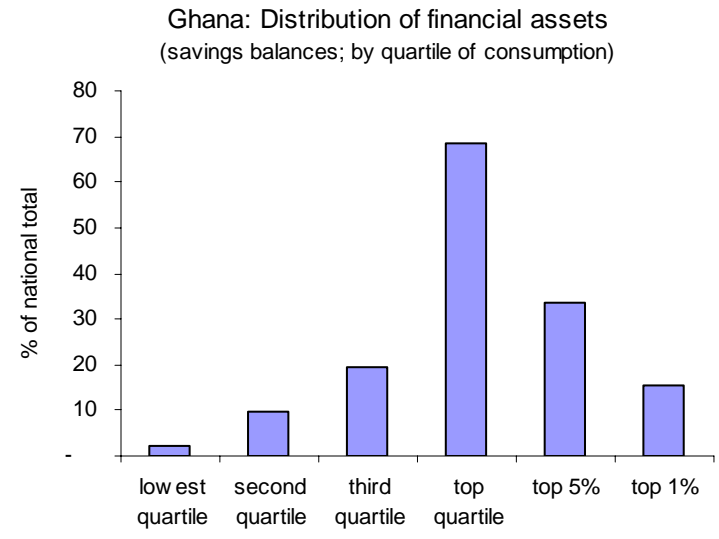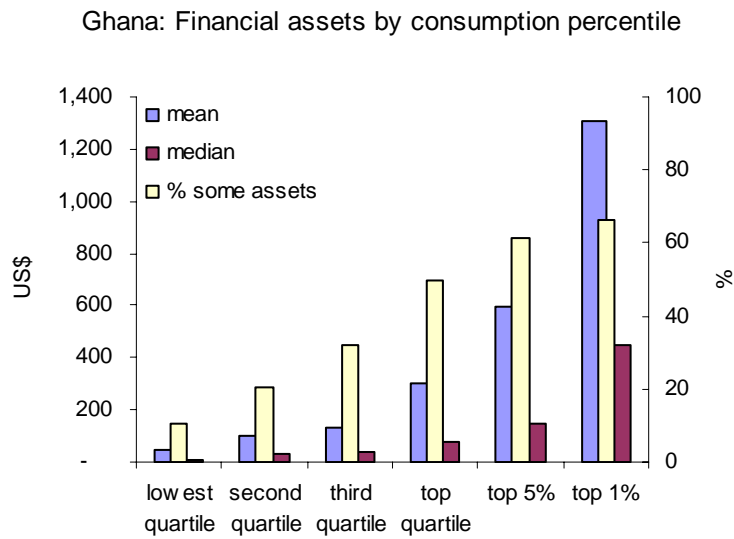
Figure 3a: Ghana: *Use and Distribution of Savings Balances*.
Source: Author's tabulations based on Ghana LSMS 1999.

Vietnam: Financial assets by consumption percentile
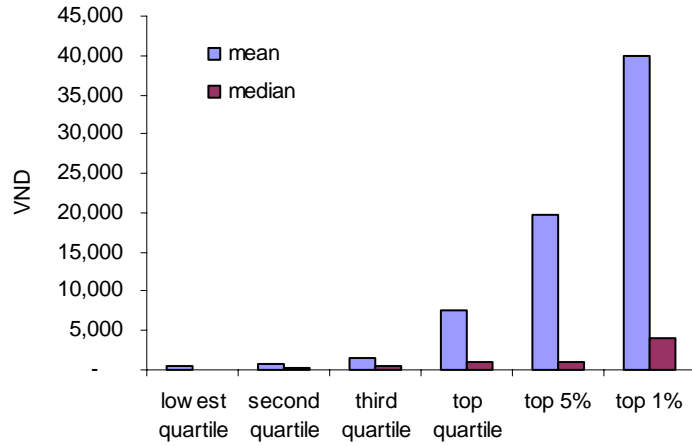
Vietnam: Distribution of financial assets
(by quartile of consumption)
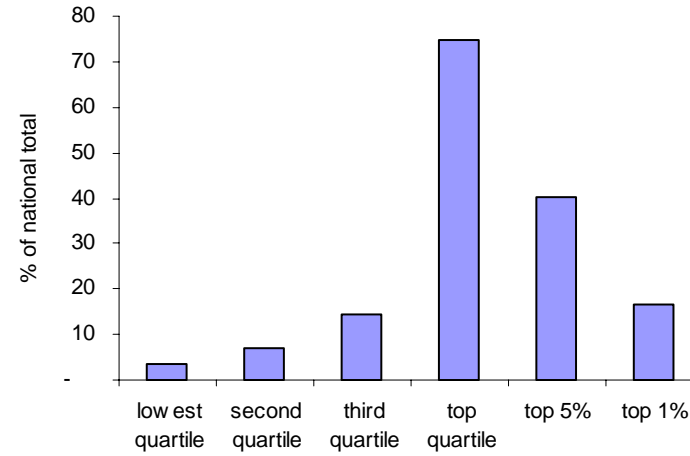
Vietnam: Financial assets by education
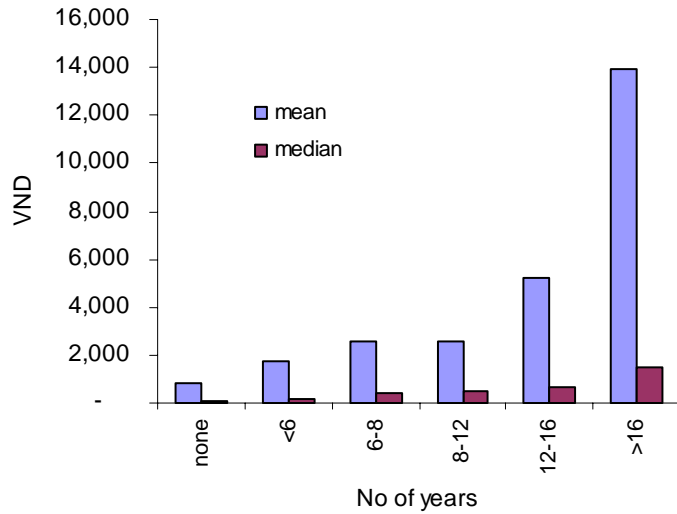
Vietnam: Financial assets by age
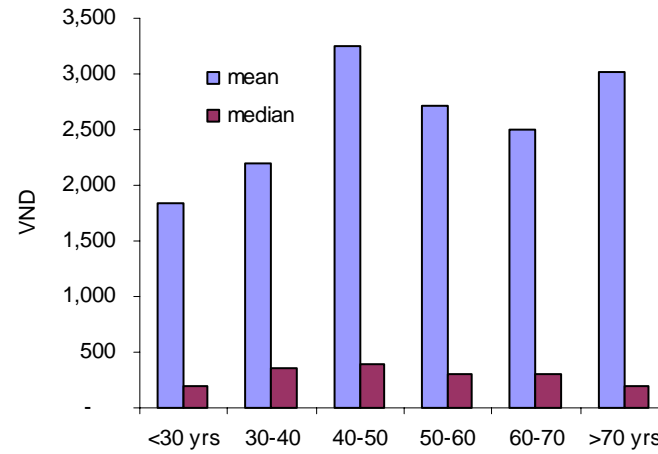
Figure 3b: *Vietnam: Use and Distribution of Savings Balances (Conditional on Reporting a Holding).*
Source: Author's tabulations based on Vietnam Living Standards Survey (VLSS), 1997-98.

Jamaica: Financial assets by consumption percentile
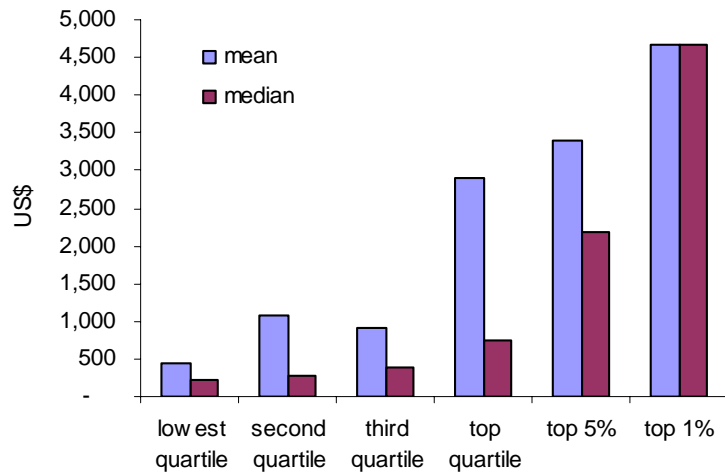
Jamaica: Distribution of financial assets
(savings balances; by quartile of consumption)
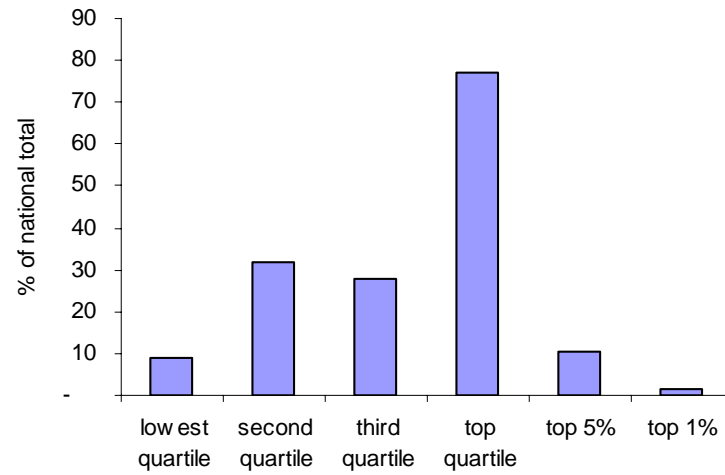
Jamaica: Financial assets by age
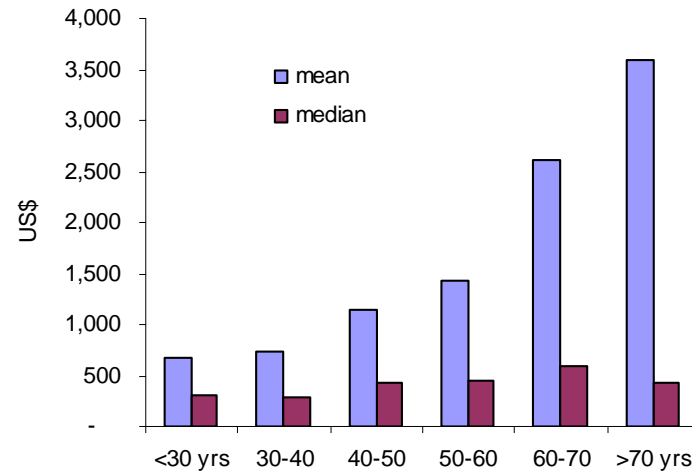
Figure 3c: *Jamaica: Use and Distribution of Reported Savings Balances.*
Source: Author's tabulations based on Jamaica Survey of Living Conditions 2004.

Financial depth measures:
Liquid liabilities and private credit, 2003
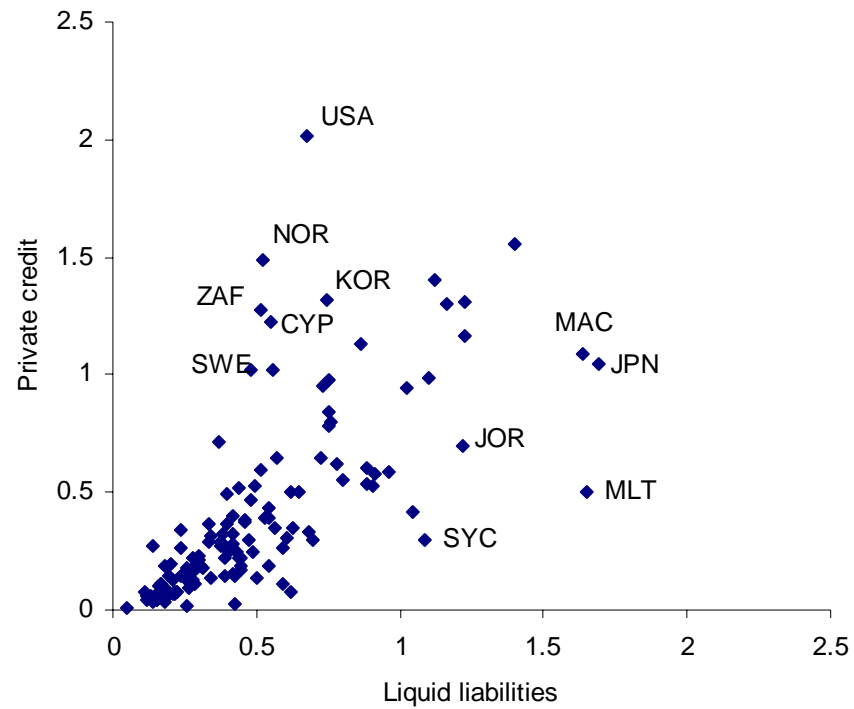
Figure 4a: *Strong Correlation between Credit and Deposit Measures of Financial Depth*
Private credit and liquid liabilities expressed as a multiple of GDP.
Source: World Bank Financial Structure Database.

Financial structure and per capita income
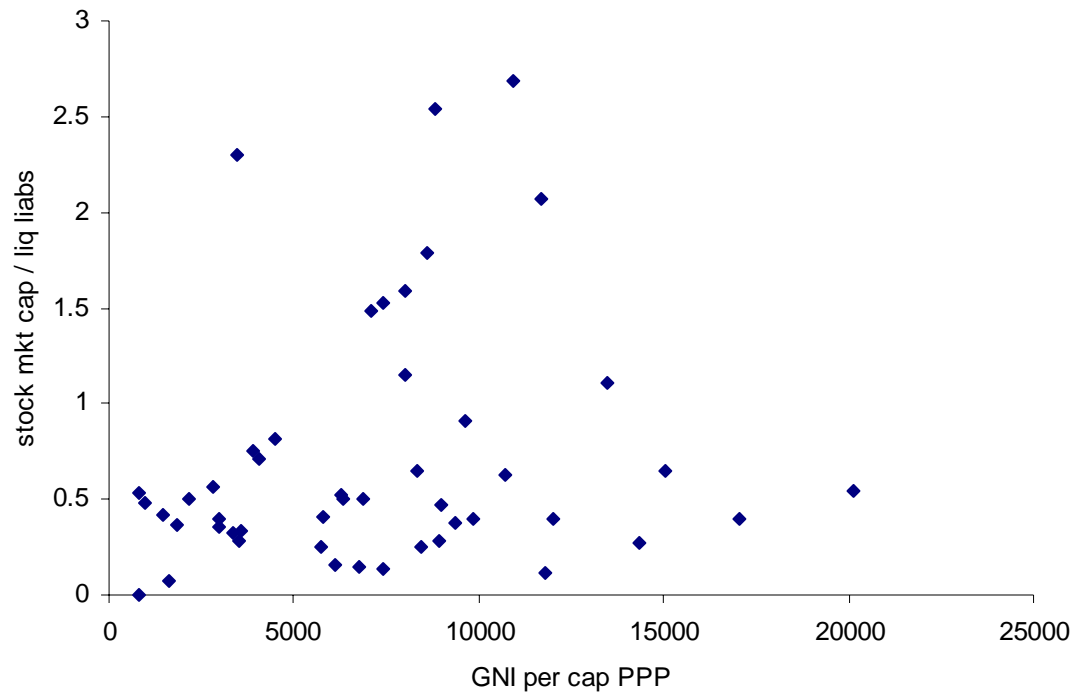
Figure 4b: *Financial Structure and Per Capita Income, Developing Countries 2003*
Ratio of stock market capitalization to liquid liabilities of the banking system plotted against per capita GNI
Source: World Bank Financial Structure Database
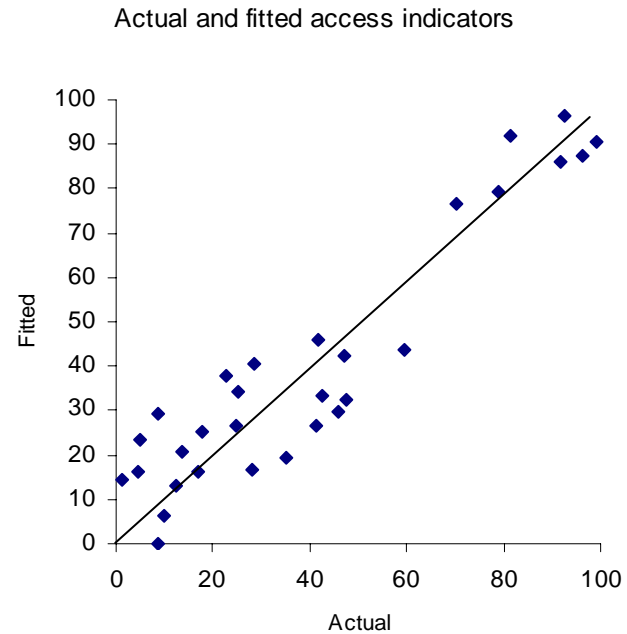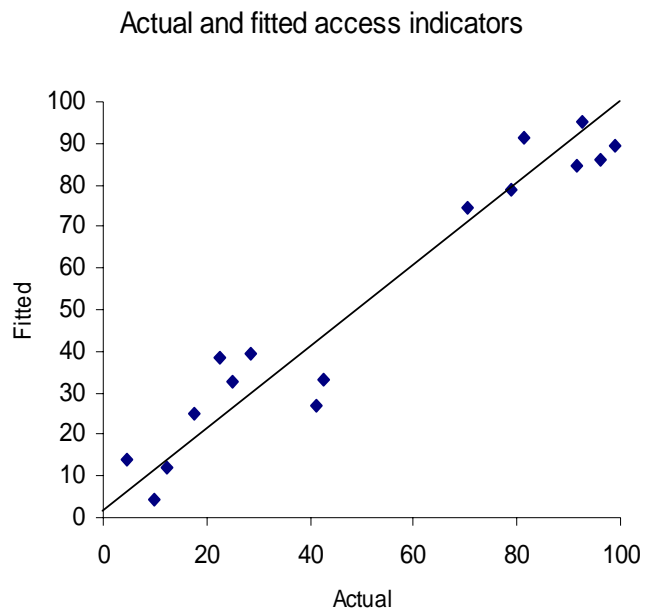
Figure 5: *Fit of the Equations Linking (a) Actual and (b) Synthetic Bank Accounts-based Information with Household-Survey Based Access Data*
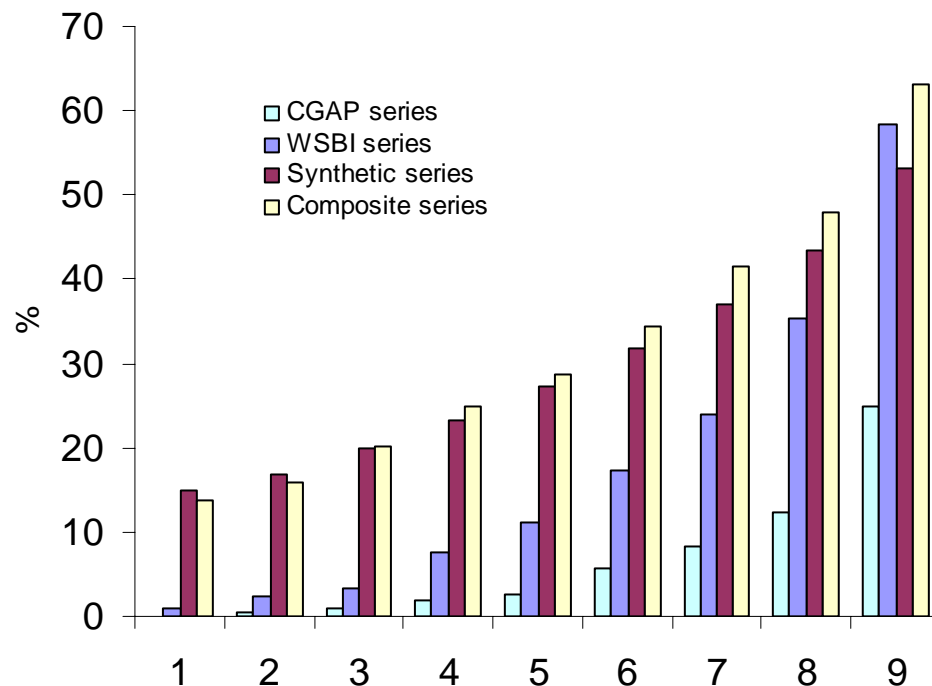(Based on Regressions 1C and 1J in Table A1)

Figure 6: *Developing Country Access to Finance, Estimated Deciles*
The four series shown are: (i) based on the CGAP data for 'alternative' financial intermediaries; (ii) based on the expanded WSBI data including additional savings banks; (iii) the *Synthetic* series based on regression J in Table 1; (iv) the *Composite* series which substitutes actual household survey data for the synthetic series where available.
Example: Seventy percent of 138 developing countries in the database have at least 41.2 accounts per 100 adult population according to the *Composite* series.
Source: Author's calculations based on Regression J table A1; underlying data drawn from: Beck et al, (2005) (Banking); Christen et al. (2004) (CGAP data); Claessens (2005), European Commission (2005) (Household Survey); Peachey and Roe (2006) (WSBI data).
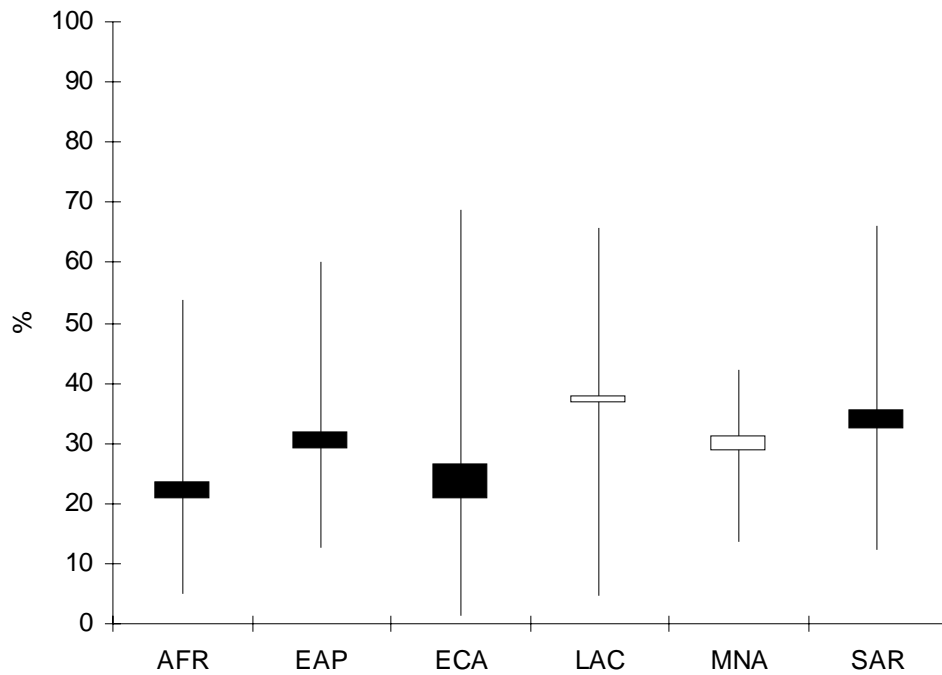
Figure 7: *Access to Finance by Country, Regional Extremes, Medians and Means (Composite Series)*
Percentage of adult population with access to an account. Shows mean, median, max and min values for countries in each region
The median is higher than the mean LAC and MNA, mean is higher than median elsewhere. ECA excludes EU member states.
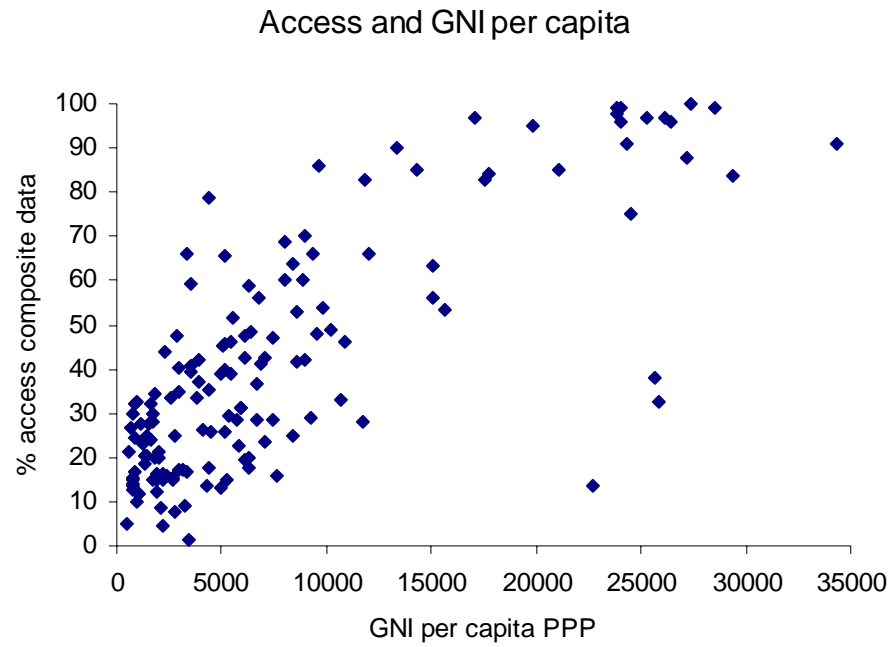Source: as for Figure 6.

Access and GNI per capita

Figure 8: *Access and per capita Income – 160 Countries.*
This uses the composite access indicator – for definition see Appendix 2. GNI per capita data from WDI
Note: the three outliers on the lower right hand side are Hong Kong, China; Macao, China; and United Arab Emirates
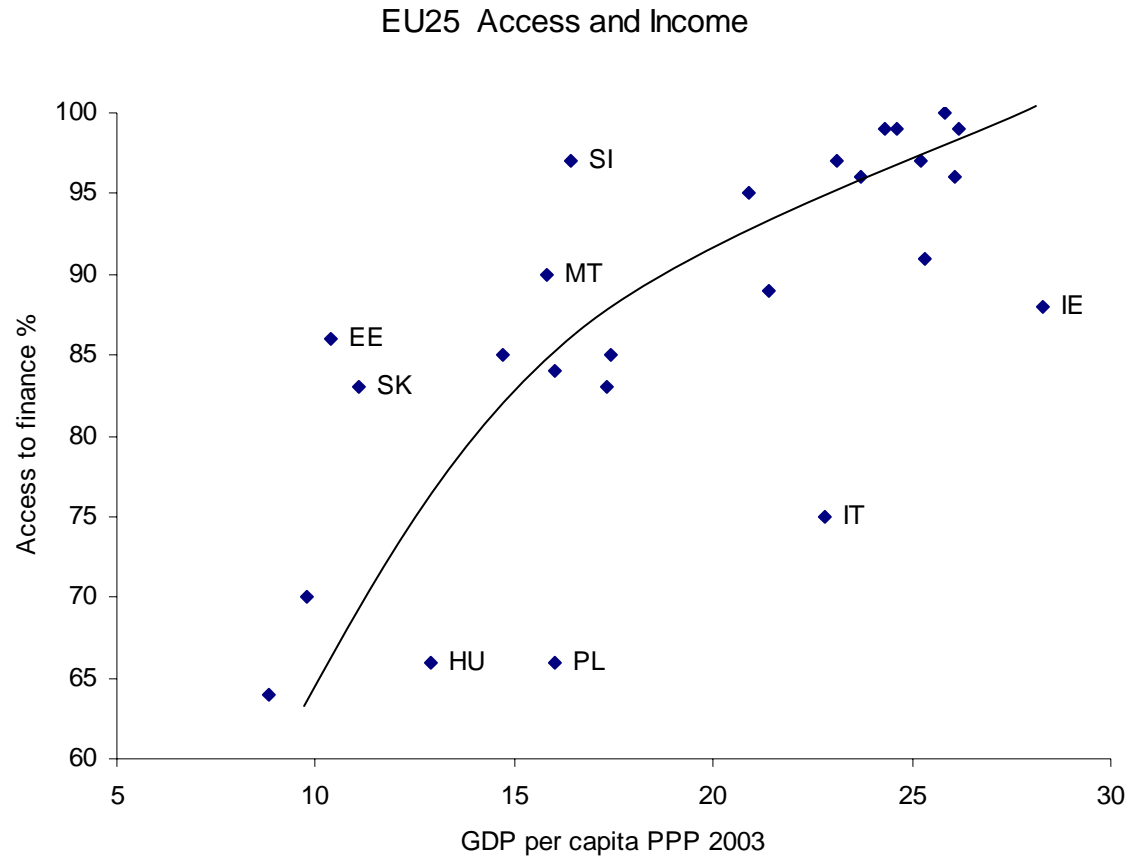
EU25 Access and Income

Figure 9: *Access to Finance and per capita GDP, 25 European Union Countries*
Source: Access based on Eurobarometer 230 (European Commission, 2005). Access percentages are 100 less the percentage reporting none of 14 listed financial products, less the percentage reporting "don't know". GDP per capita measured in thousands of Euro, source Eurostat.
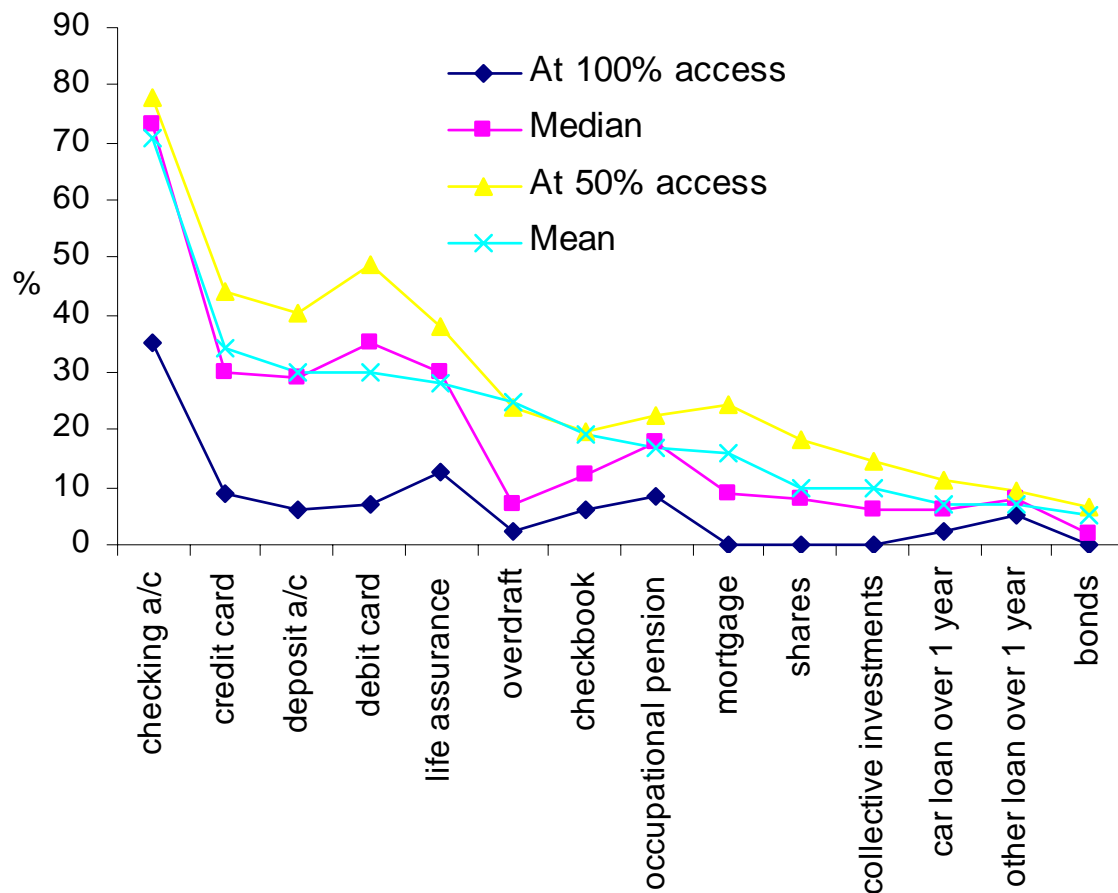
Figure 10: *The Order in Which Different Financial Products Are Acquired*
The figure shows the median and mean usage percentages across EU member states of the different products listed in Table 3, together with the
fitted percentages from the regression reported in Table 4 for 50 percent and 100 percent basic access.