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SAVINGS AND WEALTH ACCUMULATION: MEASUREMENT, INFLUENCES AND INSTITUTIONS[1]

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> The financial crisis and the Great Recession demonstrated, in a dramatic and unmistakable manner, how extraordinarily vulnerable are the large share of American families with very few assets to fall back on. (J. L. Yellen, 2014)[2]

We tend to not think about savings and wealth accumulation when times are good and incomes are rising. But when income growth stops and rainy days arrive, savings and wealth jump back to the forefront of our minds, as individuals, policy makers and researchers.

Developments over the past twenty-five years are a case in point. During the boom years of the 1990s and early 2000s, incomes grew rapidly reflecting sustained high growth rates of economic activity and an unprecedented rise in commodity prices. Furthermore, historically low interest rates in many advanced economies reduced the return on savings and lowered the cost of borrowing, contributing to higher household consumption and indebtedness and low savings rates.[3] Savings rates, measured as the difference between income and consumption, have not only been low and indebtedness rising at the household level, but also at the country level, demonstrated by large and sustained current account deficits and rising debt in many advanced economies.

When the boom ended with the onset of the global financial crisis in 2007, it became clear that much of the wealth created over the previous two decades was all but on paper and individuals and countries had very few assets to fall back on. Chair Yellen's quote at the beginning of this article is applicable not only to American families but to families and governments around the world. The lack of assets has played an important part in the painfully slow economic recovery post crisis. Consumers have been hesitant about spending and high government indebtedness has raised concerns about debt sustainability. This has hindered

A Collection of Reviews on Savings and Wealth Accumulation, First Edition. Edited by Edda Claus and Iris Claus.
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fiscal expansions and worsened the economic downturn through a full blown sovereign debt crisis in Europe.

Moreover, many countries, some high and some medium income economies, are experiencing a demographic transition with an aging population and falling fertility rates, raising concerns about the adequacy of people's retirement savings and the sustainability of public pension funds.

It is therefore high time that we turn our attention to savings and wealth accumulation, which is the theme of this book. The nine papers presented here critically review topical issues in the recent policy and research debates ranging from the effects of access to credit, the rise of Islamic finance and sovereign wealth funds, the measurement of wealth inequality and genuine savings, the distribution of wealth across generations and retirement savings.

A fundamental principle in economics is that of utility maximization–each period people choose a bundle of consumption goods and services, including leisure, to maximize lifetime utility. The way in which people maximize lifetime utility, which represents their preferences over goods and services, is by ensuring a balance between consumption and savings during the different phases of their life. Generally people prefer stable levels of consumption to large variations, meaning that similar levels of consumption today, tomorrow and the day after are preferred to a pattern that more closely matches a person's lifetime income of no or low income when young and when retired and high earnings during working years. This desire to smooth consumption and maintain accustomed living standards typically leads to three stages of savings and wealth accumulation during the lifetime of an individual. The first stage is a period of dis-savings or borrowing in early adulthood that is marked by post-secondary education expenditures, low income and debt accumulation. The second stage is a period of savings when income is high and assets are accumulated. The third stage again is a period of dis-savings and a decline in assets during retirement when earnings are low.

Access to credit is an essential tool for consumption smoothing and the topic of the first two articles in this book. The first article by Igor Livshits (2015) reviews "Recent developments in consumer credit and default literature." Consumer credit rose sharply during the 1980s but this increase in personal debt coincided with an acceleration in bankruptcy filings in the United States and other countries with personal bankruptcy systems. The dramatic rise in household indebtedness and default raised concerns with policy makers and became a focus of attention for economists seeking to understand the driving forces behind them. Since then the quantitative literature on unsecured consumer debt and default has made great strides. In the basic model of default the key assumption is that borrowers face an interest rate that is a function of the amount borrowed and that includes a risk premium–the risk premium reflects the probability of default and is also a function of the amount borrowed. Underlying the design of bankruptcy systems is a basic tradeoff between the partial insurance of being able to walk away from debts (i.e., greater ability to smooth consumption across states of the world) and the inability to commit to repaying loans in future, which makes borrowing more expensive and reduces the scope for consumption smoothing over time. There are four possible explanations for the rise in personal bankruptcies and consumer credit. The first is increased risk exposure of borrowers: Existing borrowers face more adverse shocks. The second is increased risk exposure of lenders: Lenders advance loans to riskier borrowers. The third explanation is compositional changes in the population and the fourth is greater willingness of borrowers to file for bankruptcy. The empirical evidence reviewed by Livshits suggests that the rise in personal bankruptcies and consumer credit was due to two reinforcing factors: a decline in the cost of bankruptcy and a decline in the cost of lending as a result of interest

rate deregulation and improvements in information processing technology. Moreover, welfare analysis suggests that information improvements have raised average welfare despite leading to greater bankruptcy rates. Livshits also discusses delinquency and informal default, debt restructuring and collection, and the cyclical behavior of credit and bankruptcy. He concludes with key challenges and future research directions including the need to model the interaction of borrowers with multiple lenders and combining secured and unsecured debt.

The second article by William Elliott and Melinda Lewis (2015) focuses on "Student debt effects on financial wellbeing: research and policy implications". Student debt has been rising since the mid-1980s in the United States and the authors conjecture that wealth inequality has become a more pressing problem among young adults than income inequality. Presently about 75% of young adults in the United States aged 30–40 years have higher incomes than their parents had, but only about 36% have accumulated more wealth than their parents did. A contributing factor to the lower wealth accumulation is student debt–young adults with student debt are more likely to have less wealth than their parents had despite earning higher incomes. Student debt started rising when needs based financial aid and state support for public, higher education institutions were reduced, shifting the cost of tertiary education from the government to individuals. This has had important effects on wealth accumulation. Households with student debt tend to have lower net worth and lower retirement savings than those without student debt. They also tend to have lower credit scores making it more difficult for them to gain access to productive capital to finance wealth creation, in the form of homeownership or business development. Student debt also influences other lifetime decisions. For instance, it can affect career planning (driving graduates away from lower paying, public sector jobs) and it can lower the probability of marriage and delay having children. The authors contend that schemes designed to prevent student debt burdens, such as income based repayment and pay as you earn plans, may in fact be *adding* to the student loan problem rather than solving it. They argue that the rebuilding of the U.S. financial aid system must begin with a more complete accounting of the true costs of student loans, both to students and to the larger economy. They also advocate for more research to be done in particular on how much debt is too much debt.

Access to credit is rising around the world including in Islamic countries and Pejman Abedifar, Shahid Ebrahim, Philip Molyneux and Amine Tarazi (2015) examine in the third article in this book the recent empirical literature on "Islamic banking and finance: recent empirical literature and directions for future research". In Islamic banking and finance the key underlying principles are the prohibition of *Riba* (narrowly interpreted as interest) and the adherence to other *Shariá* (Islamic law) requirements. A ground breaking experiment of incorporating Islamic principles into financial transactions was conducted during the 1960s in Egypt and the first Islamic financial institution with "bank" in its name was established in 1971. Since then the Islamic financial industry has developed as an alternative model of financial intermediation and Islamic banking is practiced by conventional commercial banks (via Islamic windows), traditional Islamic banks as well as non-bank financial institutions and multinational financial institutions (like the Islamic Development Bank). Reviewing the empirical literature on the performance of Islamic versus conventional banks the authors conclude that apart from key exceptions, there are no major differences between Islamic and conventional banks in terms of efficiency, competition and risk features although small Islamic banks are found to be less risky than their conventional counterparts. However, there is suggestive evidence that Islamic banking and finance may aide inclusion in wealth accumulation to a greater extent than conventional financial institutions, which may, at least in part, reflect the core principles

of Islam of social justice, inclusion and sharing of resources. However, much more research is needed on the features and (socio)economic effects of Islamic financial instruments and institutions.

Frank Cowell and Philippe Van Kerm (2015) expressly examine the distribution of wealth. In their article “Wealth inequality: a survey” they address three main questions. What is the appropriate definition of wealth? How does the measurement of wealth inequality differ from that of income inequality? What are the appropriate procedures for analyzing wealth data and drawing inferences about changes in inequality? To answer these questions Cowell and Van Kerm summarize the main issues concerning wealth data, inequality estimation and inference. They outline standard methods, practical solutions and convenient remedies for potential problems and illustrate some of the concepts and methods using data from the Eurosystem Household Finance and Consumption Survey. The authors propose that the most appropriate definition of wealth in empirical analysis is current net worth or net wealth, measured as the difference between assets and debts. A particular feature of current net worth or net wealth is that a large proportion of households or individuals have negative net wealth. Furthermore, wealth distributions are characterized by skewness and fat tails resulting in sparse, extreme data in typical samples. These features of wealth distributions render traditional measures of inequality inadequate and require adjustments in measurement, estimation and inference. Making the appropriate adjustments wealth inequality typically is found to be (much) larger than income inequality. Moreover, life cycle dynamics tend to be more pronounced in the case of wealth inequality compared to income distributions. The authors conclude that measuring wealth inequality is beyond estimations of wealth concentration among the extremely wealthy, which recently have become popular measures of inequality, and should take into account entire distributions. However, taking into account entire distributions requires a broader set of concepts and tools than are used in income inequality measurements.

Beyond consumption smoothing and wealth accumulation at the individual or household level, intergenerational equity considers the extent to which living standards are equalized across generations. In this respect, government expenditures and savings are important influences. Public expenditures that are financed by issuing government debt are a transfer of obligations from current to future generations. Such transfer of obligations may be appropriate, for example, to finance the purchase of assets that are used by current as well as future generations or if sustained economic growth over time means that better off future generations are more able to afford the cost of repaying inherited debt. Respectively, future obligations may be met by generations accumulating assets to prefund future payments, such as pension payments, or to share revenues from the extraction of non-renewable resources with future generations, e.g. sovereign wealth funds.

The measurement of government debts and deficits is the topic of the article by Timothy Irwin (2015) “Defining the government’s debt and deficit”. Irwin notes that despite international accounting standards, there are still many differences in how governments measure debts and deficits. They can be defined for central government, general government and the public sector, and, for any definition of government, there are different measures of debt and deficit, including those generated by four kinds of accounts–cash, financial, full accrual and comprehensive accounts. The different measures of debt and deficit all contain different information about public finances and they all are susceptible to mismeasurement. Narrow definitions of government encourage the shifting of spending to entities outside the defined borders of government, while narrow definitions of debt and deficit encourage operations involving off balance sheet assets and liabilities. Broad measures of debt and deficit on the

other hand are susceptible to the mismeasurement of on balance sheet assets and liabilities. Moreover, measures of debt and deficit are more likely to be manipulated if they are subject to binding fiscal rules or targets. In contrast, governments with greater budgetary transparency are less likely to engage in budgetary manipulations as these are more likely to be discovered and publicized. Irwin concludes with two lessons for accountants, statisticians and budget officials. First, he advocates that debt and deficit measures need protection from manipulation, such as independent measurement, independent auditing, the use of standards set by independent bodies and the publication of the assumptions underlying the measurements so that calculations can be verified. Second, several measures of the deficit and debt should be produced and reconciled to provide more complete assessments of public finances and to help reveal manipulation in targeted measures.

William Megginson and Veljko Fotak (2015) in “Rise in the fiduciary state: a survey of sovereign wealth fund research” review the literature on sovereign wealth funds (SWFs), which are investment vehicles that transfer wealth from current to future generations. Since January 2008 more than 25 countries have launched or proposed to set up sovereign wealth funds–usually to preserve and protect new monetary inflows from transfers of oil (and natural gas) revenues or from transfers of excess foreign exchange reserves earned from exports. Norway’s Government Pension Fund Global (GPFG) is the largest sovereign wealth fund and the second largest pension fund after Japan’s Government Employees Pension Fund. Almost without exception all of the recently established funds are modeled after the GPFG with respect to organizational design, transparency, managerial professionalism and investment preference for listed shares and bonds of international companies. The defining characteristic of SWFs is that they are state owned and Megginson and Fotak discuss the existing literature on state ownership and what it predicts about the efficiency and beneficence of government control of SWF assets. Findings from a review of the empirical literature suggest that private funds generally outperform sovereign wealth funds across the board in their investments. Moreover, announcement period abnormal returns associated with SWF stock purchases are positive but they are significantly lower than those observed for private sector investments. This finding implies the presence of a sovereign wealth fund “discount”, which the authors suggest is due to the state ownership. They conclude with unresolved issues in SWF research. With the notable exception of the activities of Norway’s GPFG, they argue, far too little is known about the details of SWF investments and the returns that the investments achieve. It is also unclear what will be the long-term impact and effects of sovereign wealth funds. In particular, they question whether it is reasonable to expect markets to efficiently and accurately assess the value impact of investments which are intentionally kept opaque by a group of funds that are themselves often little understood.

Nick Hanley, Eoin McLaughlin and Louis Dupuy (2015) consider “Genuine savings and sustainability”. Genuine savings is an empirical indicator of sustainable development and hence intergenerational well-being. It measures how a nation’s total capital stock changes from year to year, where capital includes all assets (or instruments of wealth) from which people obtain well-being. It comprises physical capital (machines, buildings, infrastructure), human capital, natural capital (renewable and non-renewable resources, ecosystems) and social capital (institutions, social networks). The literature distinguishes between weak sustainability, which requires non-declining total wealth, and strong sustainability, which requires non-declining natural wealth. Genuine savings is typically viewed as an empirical measure of the weak sustainability of an economy. It is forward looking and provides information about the sustainability of a given consumption path or pattern of resource use and hence future

sustainability. Genuine savings thus gives an indication about variation in intergenerational well-being. Estimates are available for many countries and regions but the authors find that they are typically not directly comparable because of different concepts of genuine savings being used across countries. However, as a general rule, the results suggest that economic development is probably sustainable in many countries over the long run when accounting for all instruments of wealth including human capital and total factor productivity growth. Moreover, longer time horizons and the addition of measures of the gradual improvement of productivity and technology tend to enhance the ability of genuine savings to predict future consumption. The authors conclude that genuine savings is a useful concept but its measurement requires further improvement. An interesting area of future research they suggest would be the investigation of the impact of an asymmetric distribution of wealth instruments on sustainability.

The last two articles in this book focus on retirement issues. In the context of retirement income policies, intergenerational equity implies that government services received by generations throughout their lifetime match the amount of taxes they have paid. A recent wave of pension reforms in several countries has led to cuts in public pension programs partly because pension policy had tended to favor current over future generations. Moreover, rising pension expenditures as a result of ageing populations have exacerbated the problem of unsustainable government finances.

In “Savings in times of demographic change: lessons from the German experience” Axel Börsch-Supan, Tabea Bucher-Koenen, Michela Coppola and Bettina Lamla (2015) discuss how German households have adjusted their retirement and savings behavior in response to far reaching pension reforms. Germany, which was the first country to introduce a formal national pension system in the 1880s, embarked on a series of reforms between 1992 and 2007. The reforms encompassed three features. They raised the statutory retirement age, they decreased public pension replacement rates and they transformed the monolithic public pension system into a multi-pillar system by fostering private and occupational pensions. The authors conclude that most Germans have adapted to the changes with both actual and expected retirement ages increasing and the proportion of households without any source of supplementary income in retirement decreasing sharply. But there is a large heterogeneity in the responses. Households with higher income and education responded strongly, while a substantial fraction of households, in particular those with low education, low income and less financial education, did not respond at all. The evidence also suggests important information gaps. For instance, Germans on average underestimate their life expectancy by a substantial margin, women by 7 years and men by 6.5 years, which corresponds to roughly a third of life spent in retirement. The authors conclude with a call for better informing people by providing easier to understand information about life expectancy as well as the eligibility for private and occupational pension schemes and their high subsidy rates. Better informed individuals may also help counter reform backlash, which is appearing in the political climate.

Retirement, which marks the end of labor earnings and the beginning of a drawdown of retirement resources, is probably the most important financial decision people make and Courtney Coile (2015) in “Economic determinants of workers’ retirement decisions” reviews the theory and evidence on the influences that have been found important. She discusses the impact of private and public pensions, wealth and savings, health and health insurance and labor demand and concludes with thoughts about future retirement behavior. A persistent trend in labor markets that is expected to continue in the future is the steady increase in the number of older women. It has occurred mainly because of a societal trend of greater female

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labor force participation and has offset any movement towards earlier retirement by women. Moreover, economic activity is shifting into the services sector away from manufacturing and other traditional blue-collar industries. The services sector typically requires computer literate workers and the evidence suggests that having computer skills is associated with an increase in the probability of continuing to work at older ages. However, the importance of this factor is expected to abate over time as the gaps in computer use by age are declining. Regarding pension plans, retirement ages have been rising and benefits have been declining for public pensions, while private plans have been shifting from defined benefit to defined contribution plans. At the same time, more responsibility is being put on workers to decide whether or not to participate in a pension plan, how much to contribute, where to invest those contributions, and how to draw down savings in retirement. With respect to the influence of health factors on retirement decisions, continuing health improvements are anticipated to further reduce the number of workers being forced into retirement earlier than planned because of adverse health shocks. However, as Coile points out more research is needed on the effects of retirement on health and well-being. Finally, the impact of equity markets and house prices on retirement decisions has not been strong and is expected to remain moderate.

Savings and wealth accumulation are once again at the forefront of policy and research debates. The nine articles presented here provide critical reviews of some of the most topical private and public sector aspects and discuss policy implications. However, many challenges and unanswered questions remain underlining the need for more analysis and research.

Notes

1. The views expressed in this article are those of the authors and do not necessarily represent those of the International Monetary Fund (IMF), IMF policy, its Executive Board or IMF management.
2. Speech Chair Janet L. Yellen, At the 2014 Assets Learning Conference of the Corporation for Enterprise Development, Washington, D.C., September 18, 2014; http://www.federalreserve.gov/newsevents/speech/yellen20140918a.htm accessed 24 April 2015.
3. This is the substitution effect. The income effect works in opposite direction to the substitution effect for savers, i.e., lower interest rates reduce income from interest earning assets thus increasing savings. For borrowers the substitution and income effects reinforce each other, i.e., lower interest rates increase disposable income because of lower debt payments. Other factors contributing to low savings rates are demographic changes.

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