

# NEW SCHOOL ECONOMIC REVIEW

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# Letter from the Editors

Thank you for reading the 9th edition of the New School Economic Review!

This has been a great year for us as we continue to expand on the legacy of the NSER. Through the effort of our reviewers and the entire editorial team, you have in your hands what we believe to be an excellent display of the values of New School economics.

First on this issue, we have from Prof. Sreenivasan Subramanian, a non-standard contribution to the economics literature. A piece of literature, in an absurd narrative format in homage to the work of Stephen Leacock, “A Leacockian View of Economics Today” is sure to bring insight, entertainment, and hopefully some laughs. We also have a more standard piece of literature coming from Dr. Anthony Bonen called “Households’ Capital Account: Investment, Gross and Net Savings in the NIPA”.

This year we also have the honor of publishing a piece involving the New School’s most esteemed senior faculty. With last year’s release of Prof. Anwar Shaikh’s ground-breaking book *Capitalism: Competition, Conflict and Crisis*, we have published here a book review by Dr. Juan E. Santarcángelo.

We editors have benefited from the heritage of the New School’s economics department, with its world famous diversity of academic approaches in economics. We would not be able to reach publication if not for the wonderful reviewers who devoted their time and effort to contribute to the NSER. The New School’s heritage also has given us the ability to attract such great submissions. And it is in this spirit that the entire editorial team has been able to come together to compile this for you, our readers. Thank you to all who were involved in the making of this journal and we hope that this humble journal of ours exhibits the strength of Heterodox thinking in economics.

**Julian Kyle Bautista and José Alejandro Coronado**



# Households' Capital Account: Investment, Gross and Net Savings in the NIPA

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## Abstract

We recreate the NIPA adjustments pioneered by Ruggles and Ruggles (1992) for the period 1947-2012 and reconfirm their results: household net lending to other sectors is counter-cyclical and is a small fraction private firms' gross capital formation (GCF). To test the causal role of household Net Savings in terms of GCF and GDP growth, a VEC model is estimated. The VECM is cointegrated stationary for the three annual time series, but exogeneity testing shows household Net Savings is exogenous. We argue this is evidence of inter-sectoral investment demand as driving feature of growth.

*JEL classification:* E01, E12, E21

*Keywords:* Household Savings, National Accounts, Investment

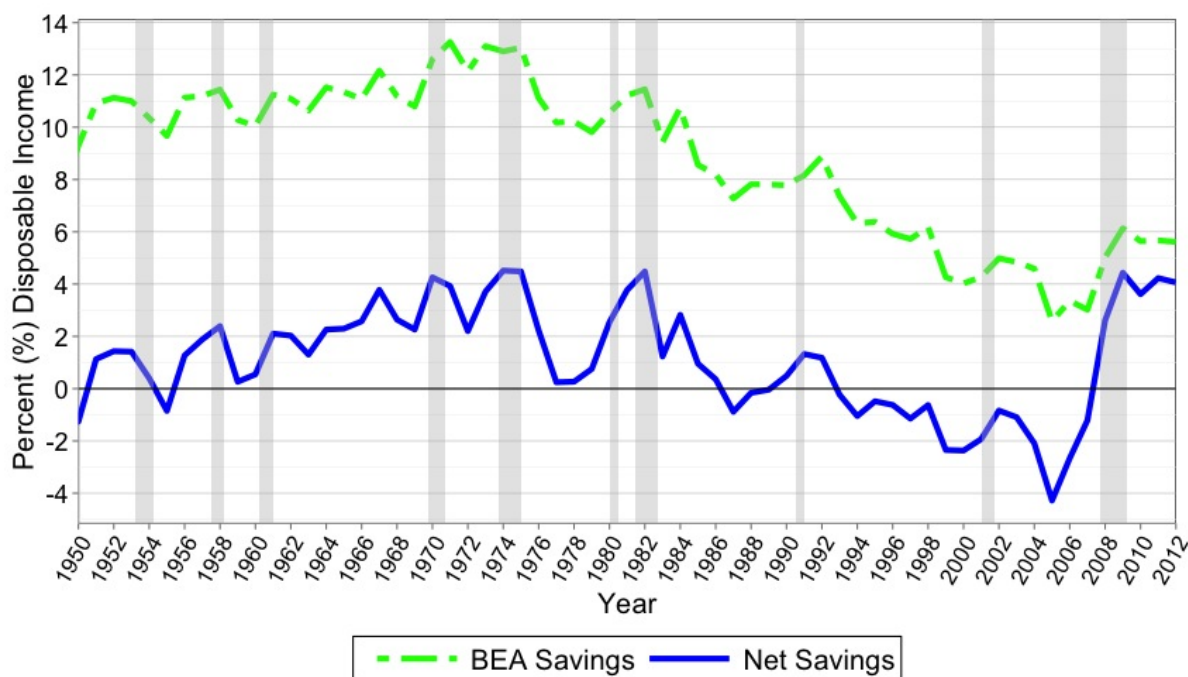
## 1 INTRODUCTION

The National Income and Product Accounts (NIPA) in the United States (US) and other major economies (e.g., Australia, Canada, the United Kingdom) are structured such that the macroeconomic data for the household sector conforms to a simplified view of domestic economic behaviour. In accordance with standard economic theory, households in NIPA are: (i) barred from investing in themselves directly, and; (ii) act *as if* in-kind and implicit income are part of their budget sets. To meet these two theoretical requirements the Bureau of Economic Analysis (BEA) employs a myriad of accounting transformations to the raw data. Although useful for certain endeavours, standard national accounting practices serve to obscure actual households' self-investment and capital formation activities. It is important for researchers and policymakers to have access to alternative configurations of macroeconomic data that can shed light on otherwise enveiled economic behaviour. To that end this paper reconstructs US household income and spending from NIPA to delineate the sector's internal investments, capital formation and, by extension, actual savings.

The accounting adjustments employed here were first deduced in Ruggles and Ruggles (1992) in what the authors referred to as a 'market transaction view' of savings and

capital formation. Indeed a key element of their approach is to treat households as self-investors engaged in capital formation within the household sector. Household capital formation is a particularly helpful in highlighting the sector's unsustainable mortgage borrowing leading up to the 2008 global financial crisis. As elaborated in Section 2, internal capital formation includes net housing purchases, home improvements and the purchase of durable goods; as such it equals the difference between households' gross and net savings. Net savings,  $NS_t$ , appear to have been a key indicator of fragility in the US economy. This is because net savings represent either households' supply of investible funds to the rest of the economy (if  $NS_t > 0$ ) or their net borrowing from, primarily, banks (for  $NS_t < 0$ ). Although the BEA's figure for household savings as a proportion of disposable income declined during the 'Great Moderation', our reconstructed series for households' net savings was falling *and* persistently negative from 1993 through 2007 (see Figure 1).<sup>1</sup> Thus, not only is our net savings data unprecedented for the post-War era, it is also demonstrably and undeniably unsustainable. The latter cannot be said for the BEA's measure of household savings.

**Figure 1:** Household Saving Rates: BEA vs reconstructed Net Savings



Author's calculations. Shaded regions indicate US recessions. Note the numerators of the data series differ since different gross (and disposable) incomes are used for the two savings figures.

<sup>1</sup>The finding of aggregate dissavings (read: net borrowing) of the household sector accords with survey and other microeconomic data.

Figure 1 plots annual net savings as proportion of disposable income.<sup>2</sup> The net rate of savings presented here holds insights for both household decision-making and about the transmission mechanisms between aggregate savings and investment. Regarding the former, the net savings rate appears to be counter-cyclical: it rises before and through recessions before falling back to very low levels during the upswing. A noticeable exception, however, is slow secular rise in the savings rate through the relatively stable growth of the 1960s. The overall counter-cyclical pattern is most pronounced from 1980 onwards. As we discuss in section 3.1 the pattern is perfectly understandable from the point of view of household capital formation: during lean years households hold back on new purchases and instead “consume” a greater share of their existing capital (e.g., appliances, cars, etc.).

The second apparent inference from Fig. 1 is that the net saving rate is relatively small and, in recent years, often negative. In standard macroeconomic theory the pool of savings flowing from households to the private sector acts as a supply constraint on investment funding. In part 3.2 we provide an overview of how the dominance of loanable funds theory instills savings with causal priority in savings-investment equalization process. Section 4 empirically debunks the investment-adjusts-to-savings belief insofar as it relates to households’ private savings. This non-adjustment is demonstrated through an error correction model relating private sector capital formation, the level of economic activity and household net savings. Although these three series covary, net savings are shown to be an exogenous component of the system meaning they are inconsequential in explaining both GDP and investment. The implications is that households are passively responding to these two, much larger drivers of the economy. Before turning to these issues, Section 2 details the national accounting adjustments necessary to reconstruct the household sector as engaged in capital formation.

## 2 DERIVING HOUSEHOLDS’ CAPITAL ACCOUNT

The accounting adjustments applied to the NIPA are based on the work of Ruggles and Ruggles (1992). The authors recover figures for the gross capital formation of households and investigate Simon Kuznet’s data on investment in seven private industry sectors. In each case they find that investment levels in the post-War period (through 1989) were almost entirely attributable to each sector’s retrained earnings. Though the expansion and deepening of financial markets since the time of their writing has likely altered some of the patterns of investment, no one (to the best of our knowledge) has updated their

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<sup>2</sup>The savings rate related to our Net Savings measure is relative to the adjusted disposable income made by the author, not the BEA measure. This is necessary since net saving is based on the difference between income and expenditures adjusted according to the methodology laid out in Ruggles and Ruggles (1992). Conversely, the BEA saving rate values in Fig. 1 are based on the BEA measure of disposable income, i.e. Table 2.1 line 27.

accounting adjustments for the household sector. In so doing we confirm their finding that the household sector has provided little, if any, of the funds needed for private sector investment through the post-War era (Ruggles and Ruggles 1992, p. 126).<sup>3</sup> The Ruggles' recovery of, and the present update to, household gross savings and capital formation leads to evidence that challenges both standard consumer saving behaviour hypotheses and the simple precepts of the saving-investment connection common in macroeconomic theory.

To determine households' direct capital formation and net lending four types of adjustment must be made to the NIPA. First, the income and outlays of non-profit institutions primarily serving households (NPISHs) must be removed from the NIPA's "Households and NPISHs" category. Typically, this conjoined group is reported as *the* household sector. Secondly, employer contributions to and interest earnings on private and public pension funds are treated as current household income. To avoid double-counting, aggregate NIPA income does not include actual pension benefits paid to retirees. To obtain real income and outflows this accounting practice must be reversed. Next, owner-occupied houses are treated in the national accounts as fictional, unincorporated firms. These accounting fictions operate as a placeholder for homeowners' real estate capital account. Correcting for this practice necessitates a household capital account which includes capital purchases (e.g., new homes) and depreciation estimates. Finally, durable goods are considered, along with housing, as part of households' capital. Therefore, purchases must be deducted from the current expenditures and added to capital purchases. As with housing, an estimate of annual depreciation/use-value must be added to the current budget of the household sector.<sup>4</sup> As we shall see, household capital formation accounts for the lion's share of households' savings, making it an essential element in household spending and savings behaviour.

Table 1 presents the Ruggles-style adjustments for the latest available data, 2012. From 1992 onwards the BEA provides separate annual accounts for households *per se* and NPISHs (BEA Table 2.9). Therefore the multiple sub-category adjustments performed by Ruggles & Ruggles are not necessary for 1992-2012 data. The figures reported in Table 1 are simply the difference between total personal income and outlays (BEA Table 2.1) and the corresponding figures for households alone.<sup>5</sup> Unfortunately, we are unable to exactly

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<sup>3</sup>They conclude that there was, in aggregate, net borrowing by the household sector from 1947-1989 (equal to  $-1.2\%$  of private sector capital formation). The adjusted data we have calculated, however, finds positive net saving (i.e., net lending) by the household sector over this period. The differences between our data and the Ruggles' seem to be due to the BEA's perennial revisions of historical accounts.

<sup>4</sup>Notably, durable goods purchases by business are treated as capital formation against which capital consumption charges are estimated. Thus, if a company buys a car for an employee NIPA treats it as capital formation; if the firm pays the individual to purchase the car for herself, it is treated as current consumption.

<sup>5</sup>Since Households and NPISHs engage in transactions – hiring and purchasing goods from one another – the NPISHs income and outlays cannot be directly deducted from total personal income and outlays without accounting for intra-sectoral flows.



recreate the sub-category adjustments for the original vintage data (see Appendix B, lines 3 and 4). Therefore, for years prior to 1992, total NIPA incomes and outlays are scaled by the 1992-2012 average ratios.<sup>6</sup> Note that for 2012, household income was greater than the NIPA total, hence the non-profit income deduction adds to household income (+\$7.2). Total outlays, however, were greater than the outlays of household alone and we therefore deduct \$74.2 billion from the reported annual total for gross expenditures (\$13,056.4).

Secondly, we must adjust NIPA data for actual pension incomes of households. In 2013, households' pension income in the national accounts of Australia, Canada and the United States (and the UK as of 2014) were changed to reflect employers' liabilities, rather than actual pension contributions. In other words, the variable cash contributions of employers to defined benefit plans have now been replaced with the contractual increases in future obligations whether or not those are met with current monies or internal IOUs. Although this is the most significant change in national accounting for decades (Harding 2013), it does not alter the necessary adjustments. As the Ruggles had done, we deduct pension fund earnings (i.e., interest and dividends, -\$575.8) and employers' contributions (-\$492.4, which now represent increases in pensioners' claims) from current household income. Finally we add to aggregate income the pension benefits paid out by pension funds to retirees for the current year (+\$898.3).

The next two areas of adjustment are crucial for the introduction of a capital account for the household sector. First, the payments to and income from the NIPA fictive home-owning firms must be reversed. Since persons living in their own home (owner-occupants) do not earn actual income from their wholly-owned, fictive house/firm, we deduct the 'imputed net rental income' received by owner-occupants (-\$367.3). On the other side of the ledger we adjust for the actual costs associated with maintaining a home. To do so, the imputed space rental fees paid to the fictive house/firm are deducted from the owners' outlays (-\$1,279.8) and the actual expenses of maintaining the home are added back in (+\$620.0).<sup>7</sup> If we were interested only in the actual market transactions of the household sector we would be finished with these two adjustments.<sup>8</sup> However, in spite of their 'market transaction view' title, Ruggles and Ruggles (1992) sought to recover the household sector's annual capital formation and, hence, a capital account.

Introducing a capital account, in turn, requires the addition of non-market adjustments to income and outlays. The capital account includes expenditures on new investments which are offset over time by returns and costs associated with said capital. The current account components, therefore, represent *gross* additions to households' flow of funds – they increase both utility (income) and costs (outlays). As a result, these imputed, or

<sup>6</sup>Household-only income and outlays average, respectively, approximately 99.8% and 99.7% of the total for the combined sector over the two decades of available data.

<sup>7</sup>Expenses include intermediate inputs, taxes, net interest paid less subsidies and current transfer payments.

<sup>8</sup>This is the point of departure between the Ruggles' approach and that found in Cynamon and Fazzari (2014) who recover households' (and the economy's) real effective demand from the NIPA.

fictive, figures have no net impact on the level of savings.

The primary issue is how to account for the depreciation or use-value of long-lasting capital goods (e.g. homes and durable goods). For housing we follow Ruggles and Ruggles (1992, p.124) and take the annual depreciation of owner-occupied housing as the difference between imputed space rental and actual expenses (for 2012 this is \$1,279.8 – \$620.0 = \$659.8). Although the BEA produces its own estimate for ‘imputed housing services’ (BEA, Table 7.12 line 164), our measure has the added benefit of having no net impact on household outlays. However, as a gross addition to the household budget, these annual housing service benefits must accrue as a part of household income. This means there is a positive impact on household income, even though the net effect on household savings is nil. Capital account expenditures are discussed below as part of households’ capital formation.

Lastly, to complete the current account of the US household sector, we must adjust for the implied services of durable goods. As with the imputed services of owner-occupied housing, durable goods imputations must be added to both income and outlays (+\$963.1) – again there is no impact on the level of savings. Durable goods consumption is the only data not available from the BEA directly. Instead we use the Federal Reserve’s Flow of Funds series for the consumption of fixed capital by households (no. FA156300103.A). Since we wish to consider aggregate investment spending as separate from the current account, household expenditure on durable goods is deducted from current outlays (-\$1,202.7).<sup>9</sup> Such a deduction was not necessary for owner-occupied household purchases because these purchases are attributed to the fictive home/firms in the NIPA.

With these four adjustments (non-profits, pensions, owner-occupied households and durable goods), we have recovered the current account of the household sector. In 2012 household gross income was \$14,836.7 billion and *current* outlays were \$12,742.6 billion. The difference between these figures yields household gross savings of \$2,094.1 billion.

It is out of gross savings that households invest in direct capital formation (\$1,552.0). Direct capital formation includes purchases to durable goods (adding back in the \$1,202.7 deducted from the current expenses above) and the net purchases of owner-occupied homes (+\$349.3). After accounting for these capital purchases, we arrive at household net savings as the difference between gross savings and capital formation – in 2012 household net savings were \$542.1 billion. This may be equivalently referred to as households’ net lending to ( $NS_t > 0$ ) or borrowing from ( $NS_t < 0$ ) other sectors.

The final two lines of Table 1 report enterprise gross capital formation (GCF, \$1,916.7), and the percentage of this accounted for by household Net Savings (28.3%). GCF is, of course, not part of the household current or capital budget, but is a private sector figure against which interesting comparisons can be made. GCF is the relevant figure

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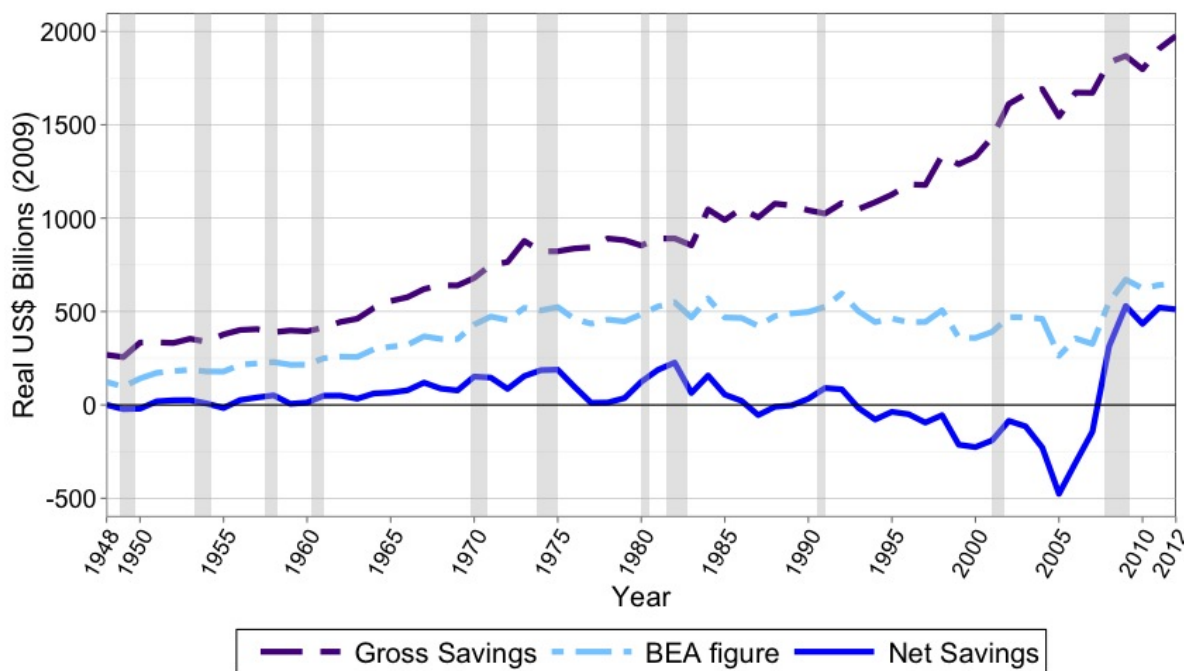
<sup>9</sup>Here again is a distinction between our approach and that found in Cynamon and Fazzari (2014). They do not adjust for durable goods since it represents real market transactions. We add these expenditures back in below as part of capital account spending.

**Table 1:** Detailed Adjustments to Household Sector Accounts, current US\$ billions

Item	Income	Outlay	Savings
<b>US NIPA</b>	<b>13,743.8</b>	<b>13,056.4</b>	<b>687.4</b>
<b>Non-profit institutions</b>	<b>7.2</b>	<b>-74.2</b>	<b>81.4</b>
<b>Employer pension funds</b>	<b>-169.9</b>		<b>-169.9</b>
Less: Employers' pension contributions	-492.4		
Less: Pension fund earnings	-575.8		
Plus: Pension benefit payments	898.3		
<b>Owner-Occupied Housing</b>	<b>292.5</b>	<b>0.0</b>	<b>292.5</b>
Less: Imputed net rental income	-367.3		
Less: Imputed space rental		-1,279.8	
Plus: Owner-occupied expenses		620.0	
Plus: Imputed housing services (gross)	659.8	659.8	
<b>Household capital formation</b>	<b>963.1</b>	<b>-239.6</b>	<b>1,202.7</b>
Less: Consumer durable outlays		-1,202.7	
Plus: Imputed durable services (gross)	963.1	963.1	
<b>Household gross income, current outlays and gross savings</b>	<b>14,836.7</b>	<b>12,742.6</b>	<b>2,094.1</b>
<b>Household gross capital formation</b>		<b>1,552.0</b>	
Purchases of owner-occupied housing		349.3	
Purchases of consumer durables		1,202.7	
<b>Household net lending</b>			<b>542.1</b>
Enterprise gross capital formation		<b>1,916.7</b>	
Household net lending as percentage of enterprise gross capital formation			28.28%

Precise adjustments available from the author upon request. See Appendix B for further details. All figures are in current (2012) billions US dollars. All data is from the BEA sections 2, 5, 6 and 11 and the Flow of Fund series FA156300103.A.

to test the empirical relevance of households' net lending as a source of loanable funds required for productive, growth-enhancing investment. However, GCF is not immediately available from the BEA. To arrive at the GCF figure we deduct from private enterprises gross capital investment (BEA Table 5.3.5, line 1) the investments made in real estate by fictive household and NPISHs firms (Table 7.12, lines 209 & 210). Note that the Net Savings/GCF fraction reported in Table 1 is rather extreme: it is third highest ratio of net savings in our data series (see Table A.1). Aggregate net lending by households was higher only in 2009 and 2010. The only other years that come close to these ratios are the short-

**Figure 2:** Three Measures of Household Savings

Author's calculations (see Appendix for details). Shaded regions indicate US recessions truncated to year. All figures are adjusted to billions of 2009 US dollars by the BEA's Personal Consumption Expenditures (PCE) deflator. BEA, Table 1.1.9, line (2).

lived spikes during the oil price shocks (1970-71, 1975) and the 1982 recession/interest rate shock. In stark contrast, from 1993 through 2007 household net saving was persistently negative! That is, through the Clinton-era boom, the dot-com crash and up to the global financial crisis, households were net borrowers (see Figure 2).

The results of the adjustments highlighted for 2012 in Table 1 are presented for the years 1990-2012 in Table 2. These figures are adjusted to 2009 US dollars. The full data series starting in 1948 is in Appendix A (Table A.1) and plotted in Figure 2. The table and plots show that net savings have been volatile and counter-cyclical over the entire period for which data are available. Figure 2 also shows that households' gross savings have trended significantly upward over the past 30 years. Yet, Net Saving was, from the 1980s double-dip recession through to the housing market collapse in 2007/08, stagnant or falling. The widening gap between these two series signals an enormous increase in household capital purchases which were, in aggregate for the entire sector, financed by external investment. Plodding along through the middle of these two series is the BEA's figure for total household savings – though it stagnates and declines somewhat through the late 1990s/early 2000s, it captures none of the unprecedented changes that were occurring during this era of massive increases in household indebtedness.

**Table 2:** Household Net Savings and Enterprise Capital Formation, Selected Years

Year	Household Sector			Enterprise Sector Gross Capital Formation	Household net Lending (+) or Net Borrowing (-) as % of Enterprise Gross Capital Formation
	Gross Household Savings	Household Gross Capital Formation	Household Net Lending (+) or Net Borrowing (-)		
1990	1,042.11	1,009.19	32.92	949.67	2.95
1991	1,024.40	934.10	90.30	900.32	8.66
1992	1,080.33	996.78	83.54	924.39	8.01
1993	1,048.59	1,065.37	-16.78	993.88	-1.52
1994	1,085.07	1,163.24	-78.16	1,066.47	-6.61
1995	1,126.03	1,163.20	-37.16	1,169.16	-2.88
1996	1,180.68	1,230.44	-49.76	1,264.65	-3.64
1997	1,177.57	1,272.41	-94.84	1,380.22	-6.45
1998	1,334.93	1,389.97	-55.04	1,502.74	-3.49
1999	1,288.53	1,501.66	-213.14	1,637.13	-12.54
2000	1,330.07	1,556.12	-226.05	1,762.43	-12.48
2001	1,433.38	1,623.27	-189.90	1,665.24	-11.20
2002	1,611.69	1,697.22	-85.52	1,537.00	-5.52
2003	1,663.09	1,777.89	-114.80	1,550.55	-7.39
2004	1,690.86	1,919.06	-228.21	1,604.31	-14.09
2005	1,544.48	2,020.49	-476.00	1,702.04	-27.30
2006	1,672.26	1,980.15	-307.89	1,792.91	-16.57
2007	1,670.98	1,814.52	-143.54	1,880.39	-7.41
2008	1,833.97	1,519.79	314.18	1,865.15	16.69
2009	1,868.52	1,339.10	529.42	1,562.80	33.88
2010	1,796.90	1,363.01	433.89	1,604.15	27.72
2011	1,907.52	1,386.20	521.31	1,734.75	31.12
2012	1,975.39	1,464.01	511.38	1,881.89	28.28
<b>Total</b> (1948-2012)	<b>60,736.13</b>	<b>57,925.14</b>	<b>2,810.99</b>	<b>53,773.91</b>	<b>5.23%</b>

Author's calculations. All figures in billions of 2009 US dollars, except for the percentages in column 6. See Appendix A, Table A.1 for full series.

### 3 IMPLICATIONS FOR THEORY

In recovering households' gross savings from the BEA's national accounts we have derived two exhaustive components of the gross measure: capital formation and net savings. These twin concepts have largely been ignored in micro- and macro-economic theory, yet they offer broad insights into household budgeting and loanable funds theory. On the one hand, the life-cycle pattern of household budgeting is more accurately described by taking account of capital account investments (rather than simply savings or dissavings). On the other hand, the net savings that remain after the household sector makes its internal investments are, by definition, the only funds made available to other sectors. Before elaborating these points it is important to note that the behavioural implications of the macroeconomic data can offer only cursory insights into the actions of heterogeneous households. The macro-level loanable funds implications, however, do offer testable hypotheses. To that end, Section 4 tests the correlation and explanatory strength of net savings vis-à-vis private sector investment and growth.

#### 3.1 Household Budgeting

As Ruggles and Ruggles (1992) note, the business cycle pattern of the sector-level results are in direct opposition to the permanent income hypothesis (PIH) proposed by Friedman (1957) and subsequently incorporated into real business cycle (RBC) models (e.g., Prescott 2004). The core empirical claim of the PIH is procyclical savings as individuals smooth their life-time consumption level. Household savings, therefore, act as a buffer: taking in extra income during good times and being drained during downturns. In contrast, our data, as well as the original results of the Ruggles & Ruggles, display counter-cyclical. Indeed, as Figures 1 and 2 respectively show, both the net savings *rate* and *level* follow a countercyclical pattern, rising as a recession takes hold and falling as the economy recovers.

Though the letter of the PIH is rejected by the corrected national accounts data, its spirit of consumption smoothing remains in tact. Net savings are more volatile than gross savings. Therefore, as one would expect, the ratio of household capital formation to net saving is procyclical. Conversely, in a downturn households hold back on big-ticket items and instead 'consume' more of their extant fixed capital. The effect is consumption smoothing in the sense that older items (ovens, furniture, automobiles, etc) are maintained until the household's income recovers, at which point new investments can be made without sacrificing current consumption. In our accounting, however, the pattern manifests as increased net savings (fewer capital purchases) followed by falling or dissavings rates.

The capital account consumption smoothing process just described also challenges the life-cycle income hypothesis (LCH). The LCH views savings behaviour as an arc over the course of one's life. It suggests that people save a significant portion of their income while

young so that they may draw down on their accumulated assets later in life. On the whole the LCH predicts that younger individuals are net lenders while older generations dissave (i.e., act as net borrowers). However, once households are understood as investors in themselves rather than as passive savers the life-cycle arc is turned on its head. Ruggles and Ruggles (1992, p. 125) neatly summarize this point:

Although there is a life-cycle pattern, it is not the one suggested by the life cycle hypothesis. It is not the accumulation of saving for old age that drives the system. Rather the dominant pattern relates to the acquisition of housing and durables by households in their formative years; in their middle and later years they repay mortgages and consumer debt thus increasing their saving and accumulating equity.

This description is even more accurate today as younger generations take on enormous student debt loads that will be paid back (one hopes) later in life. Thus, under the capital formation view of household aggregate behaviour, it is both the young and the elderly who dissave, while it is prime age workers who supply the positive balance of funds.

The life cycle pattern suggested by the Ruggles led them to predict increasing net savings in the coming years as the US population aged. Yet, as we have seen, the 1990s and 2000s were beset by the unprecedented persistence of negative net savings (when baby boomers were in their prime earning years!). This suggests a serious behavioral change has taken place in the two decades since the Ruggles published their paper. Interestingly, these years of dissaving occurred during the booming years under Presidents Bill Clinton and, to a lesser extent, George W. Bush. For standard macroeconomic theory this is a very counter-intuitive pattern since business investments were at all time highs through these years. Under a supply-of-funding constrained system, the level of private sector capital formation should have been limited by the lack of funds made available by households. We next consider why this was evidently not the case.

### 3.2 The Savings-Investment Nexus

Mainstream modern macroeconomics invariably treats savings as the driving force linking the present to the future. The level and rate of investment may vary year to year, but it must eventually be contained by the economy's real pool of savings. This (often implicit) economic view ignores the demand driven, or endogenous, nature of money and credit (Minsky 1973; Moore 1988) and rules out models with insightful nonlinear dynamics (for early examples see Kalecki 1939; Kaldor 1940). Furthermore, mainstream models more often than not treat households as the repository of all savings and firms as the sole entities engaged in capital formation. Given the adjusted accounting data discussed above, such models place enormous stock in Net Savings as the economy's driving force.

The accounting identity that national savings equals national investment *ex post* provides no insight into how *ex ante* inequality,  $S \neq I$ , adjusts to reach  $S = I$ . Yet all standard RBC and New Keynesian models smooth over this distinction by setting  $S = I$  as part of the analytical set up. Since  $S$  is a *de facto* choice variable in DSGE models, it

is necessarily  $I$  which adjusts to the agent(s) chosen  $S$  in each period. In loanable funds terms, the demand ( $I$ ) adjusts to meet the supply ( $S$ ) which is in turn generated by the identity  $S = Y - C$ . Moreover, with only one sector or agent, there is an inescapable one-to-one relationship running from savings to investment. Clearly, such representative agent models cannot account for the persistent negative saving levels evidenced by US households during the 1990s and 2000s.

Recently more sophisticated financial accelerator models have worked within the DSGE framework to better capture the volatility of investment patterns (Kiyotaki and Moore 1997; Bernanke et al. 1999; He and Krishnamurthy 2008). In this strand of literature households and “experts” consume out of net worth, which fluctuates with past investment and present shocks. This is somewhat closer to the notion, advocated above, that households smooth consumption through the services of their own fixed capital. The portfolio approach utilized in these models represents an improvement as investment decisions – usually the allocation of funds between a risky and risk-free asset – are brought to the fore. However, the models remain inescapably savings constrained. Even in the most complex model of macro-financial linkages, investible funds remain defined as the amount of capital remaining after consumption (e.g., Brunnermeier and Sannikov 2014, equations 7 & 8).<sup>10</sup>

Given the persistent patterns of gross and net savings it would seem that the ubiquitous acceptance that  $S = I$ , where  $S$  is household savings and  $I$  is private investment requires reconsideration. Clearly, the incorporation of other sectors into macroeconomic models is desirable. Yet, the data presented in Section 2 calls into question the existence of any meaningful relationship between household savings and private investment. If true, such a finding would require macroeconomic theory to always consider, at a minimum, two sectors. In the next section we explore the empirical relationship between the net savings/lending of households, firms’ annual investment and GDP. We find that the three series are closely correlated, but that Net Savings is an exogenous variable containing no impactful relationship with the other two series.

## 4 TESTING NET SAVINGS AS PART OF MACROECONOMIC ACTIVITY

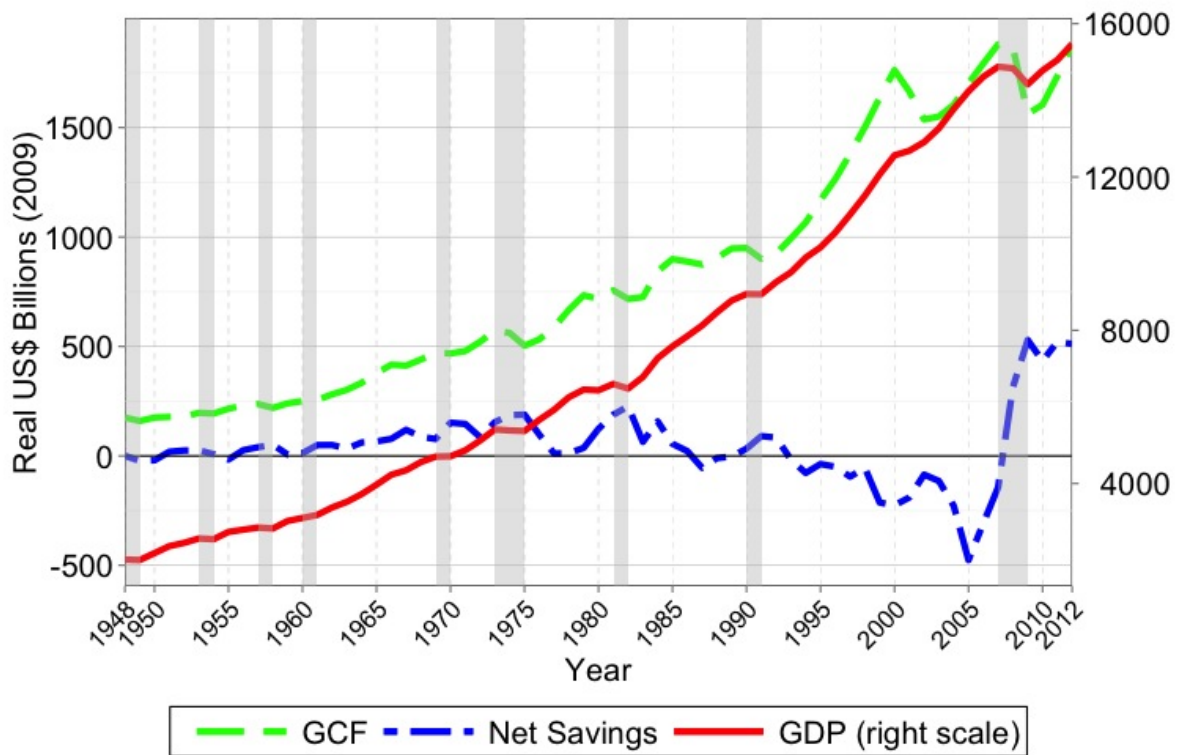
To investigate the relationships between household net savings, private enterprises’ gross capital formation (GFC) and US gross domestic product (GDP) from 1948 through 2012 we estimate and test a vector error correction model (VECM). The three inflation-adjusted series are plotted in Figure 3. The VECM is necessary since each data series is  $I(1)$  and form a cointegrated system of order 2. To save space the pretesting results are not presented here. However,  $I(1)$  series were found for a variety of specifications including

<sup>10</sup>In effect, financial accelerator-type models replace  $S = Y - C$  with  $I = NW - C$  where  $NW$  is net worth. But  $S = I$  is still never-violated relationship. The only substantive difference is that the growth process is now a market returns question ( $dNW$ ) rather than a production problem ( $Y = F(K, L)$ ).



the Augmented Dickey-Fuller and KPSS tests, as well as the Zivot-Andrews test which accounts for structural breaks. Similarly, a cointegration rank order of 2 is found under Johansen tests with and without an *ad hoc* dummy variable for the financial crisis, as well as under the Lütkepohl test that endogenously determines the point of a shift in levels (see Johansen 1988; Lütkepohl et al. 2004; Hamilton 1994, Chapter 20). Part 4.1 estimates the VECM model. Part 4.2 tests for the exogeneity of each of three series. We find that, in spite of the strong evidence of cointegration, net savings are decidedly exogenous to the series. The finding that suggests households' supply of loanable funds to the private sector is of little or no importance to macroeconomic performance.

**Figure 3:** Time Series Levels, annual data



Author's calculations. GDP data from BEA Table 1.1.5. Adjustments to 2009 US dollars made by annual figures of BEA Table 1.1.9, *Implicit Price Deflators for Gross Domestic Product* lines (1), (7) and (2) for GDP, GCF and Net Savings, respectively.

#### 4.1 Estimating the VECM

The cointegrated model estimates of GDP, GCF and Net Savings are performed for the standard Johansen trace test and a Johansen trace procedure in which a level shift dummy variable is included. The first choice is a matter of preference since the two Johansen procedures produce the same parametric estimates and standard errors, and are therefore

redundant. The latter specification is chosen to ease the analysis, since estimation of a model with an unknown level shift leads to unnecessary complications (see Lütkepohl 2010, sec., 17.4).<sup>11</sup> The new approach explicitly incorporate the level shift predicted by the Lütkepohl method for the unknown shift point. That is,

$$\mathbf{D}_t = \begin{cases} 0 & \text{for } t < \tau \\ 1 & \text{for } t \geq \tau \end{cases} \quad (1)$$

where  $\tau = 2008$  as confirmed both by the narrative surrounding the financial crisis and the Lütkepohl test for cointegration with a level shift.

For both VECM formulations, define

$$\mathbf{y}'_t := (GDP_t \quad GFC_t \quad NS_t) \quad (2)$$

and

$$\Delta \mathbf{y}'_t := (\Delta GDP_t \quad \Delta GFC_t \quad \Delta NS_t) \quad (3)$$

where  $NS_t$  represents Net Savings of the household sector.

Then, following the notation of Lütkepohl (2010), the VAR(2) process has a VECM representation

$$\Delta \mathbf{y}_t = \boldsymbol{\alpha} \boldsymbol{\beta}^{0'} \cdot \begin{bmatrix} \mathbf{y}_{t-1} \\ t \end{bmatrix} + \boldsymbol{\Gamma}_1 \cdot \Delta \mathbf{y}_{t-1} + \boldsymbol{\nu} + \mathbf{u}_t \quad (4)$$

This may be equivalently expressed as

$$\Delta \mathbf{y}_t = \boldsymbol{\alpha} \cdot \mathbf{z}_{t-1} + \boldsymbol{\Phi} t + \boldsymbol{\Gamma}_1 \cdot \Delta \mathbf{y}_{t-1} + \boldsymbol{\nu} + \mathbf{u}_t \quad (5)$$

where

$$\boldsymbol{\beta}^{0'} := [\boldsymbol{\beta}' : \boldsymbol{\eta}], \quad \boldsymbol{\Phi} := \boldsymbol{\alpha} \cdot \boldsymbol{\eta} \quad \text{and} \quad \boldsymbol{\beta}' \cdot \mathbf{y}_{t-1} := \mathbf{z}_{t-1}$$

The  $r \times (k+1)$  matrix  $\boldsymbol{\beta}^{0'}$  represents the cointegrating relations which includes the deterministic trend component,  $t$ . The vector  $\mathbf{z}_t$  contains the error corrected lagged level variables for which the  $k \times r$  ‘loading matrix’,  $\boldsymbol{\alpha}$ , is estimated.  $\boldsymbol{\nu}$  is the unrestricted constant term and  $\mathbf{u}_t$  is a vector of independent Gaussian errors.

The least squares estimation of the coefficients from equation (4) are reported in Table 3. The results show a significant negative relationship between the lagged change in Net Savings ( $\Delta NS_{t-1}$ ) and the changes in  $\Delta GDP_t$  and  $\Delta GFC_t$ . Specifically, a \$1 change

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<sup>11</sup>Unnecessary given the ubiquitous acknowledgement of the long-term impact of the global financial crisis.

**Table 3:** VECM Estimation Coefficients, constant and deterministic trend

	Error Correction		Constant	Lagged Differences			Fit
	$\alpha_{i,1}$	$\alpha_{i,2}$	$\nu$	$\Delta GDP_{t-1}$	$\Delta GCF_{t-1}$	$\Delta NS_{t-1}$	$R^2_{adj}$
$\Delta GDP_t$	0.045 (1.17)	-0.231 (-0.96)	49.464 (0.90)	0.285 (1.28)	-0.739 (-1.59)	-0.874*** (-3.97)	0.761 [0.00]
$\Delta GCF_t$	0.061*** (4.26)	-0.376*** (-4.21)	-55.602*** (-2.74)	0.059 (0.72)	0.238 (1.39)	-0.317*** (-3.90)	0.536 [0.00]
$\Delta NS_t$	-0.011 (-0.44)	0.097 (0.60)	8.740 (0.24)	-0.252* (-1.69)	0.690** (2.21)	0.192 (1.31)	0.109 [0.05]

Author's calculations. Coefficient t-statistics are reported in round parentheses. The final column reports the adjusted  $R^2$  measure of fit and, in square brackets, the p-value associated with the F-test of the regression. In each regression the degrees of freedom are 6 over 57. Significance levels \*, \*\*, \*\*\* indicate rejection of the null hypothesis with 10%, 5% and 1% confidence, respectively.

in Net Savings precedes an \$0.87 drop in GDP and a \$0.32 decline in private capital formation. This aligns with the counter-cyclical behaviour of Net Savings discussed in section 2. Yet, it is notable that changes in Net Savings appears as the only significant lagged differenced variable for changes in the other two series. Conversely, both  $\Delta GDP_{t-1}$  and  $\Delta GCF_{t-1}$  are significant with respect to changes in Net Savings, though GDP has a negative impact (with a \$1 increase in output leading to a 25¢ fall in savings), whereas increasing rates of investment precede increasing rates of household net savings. Finally, Table 3 has the interesting result that only  $\Delta GCF_t$  is significantly affected (and, at the 1% level in each case) by the error correction matrix on lagged levels,  $\alpha$ , as well the constant term  $\nu$ .

The results in Table 3 are not riveting. The lack of significant coefficients in the  $\Delta GDP$  and  $\Delta NS$  regressions undermines the strength of the cointegrated relationship found in pretesting. That said, this specification for  $\Delta GDP$  has a remarkably high explanatory power with  $R^2_{adj} = 76\%$ , even though there is but one significant regressor. Conversely,  $\Delta GCF$  is significantly explained by the error correction term, yet it has a lower  $R^2_{adj}$  at 54%. Finally, only 11% of the changes in Net Savings are explained by this model (though it retains explanatory power with a  $p$ -value = 5%).

The level shift VEC model requires a slight modification. Rather than testing (4), we include the explicit trend shift term  $\mathbf{D}_t$  as defined in equation 1.

$$\Delta \mathbf{y}_t = \alpha \beta^{0'} \cdot \begin{bmatrix} \mathbf{y}_{t-1} \\ t \end{bmatrix} + \Gamma_1 \cdot \Delta \mathbf{y}_{t-1} + \nu + \mathbf{D}_t + \mathbf{u}_t \quad (4')$$

The results of the level shift model specified by (4') are presented in Table 4.

The VECM estimation which includes a level shift dummy,  $\mathbf{D}_t$ , performs much better

than the standard approach discussed above. The majority of the coefficients are now significant (see Table 4), and all signs remain unchanged from Table 3. Changes in GDP now depend significantly on lagged changes in net savings and private capital formation. Moreover the estimated coefficients of each have increased in magnitude such that  $\Delta NS_{t-1}$  now has a one-to-one negative relationship with  $\Delta GDP_t$ . Further,  $\Delta GDP$ 's own lagged difference is now significant at the 10% level.  $\Delta GCF$  is little changed from the previous VECM estimation, which is logical given it is the only series for which the financial crisis's level shift is not significant. Nevertheless, the inclusion of the dummy now means that  $\Delta GDP_{t-1}$  is now significantly and positively related to changes in capital formation, as expected. Finally, the lagged differences of the other two variables are now insignificant with respect to  $\Delta NS$  where as the constant and dummy variables are highly significant. It is also notable that the error correction matrix  $\alpha$  now has at least one significant element in each equation of the level shift VECM.

**Table 4:** Level Shift VECM Estimation Coefficients, deterministic trend

	Error Correction		Constants		Lagged Differences			Fit
	$\alpha_{i,1}$	$\alpha_{i,2}$	$\nu$	$D_t$	$\Delta GDP_{t-1}$	$\Delta GCF_{t-1}$	$\Delta NS_{t-1}$	$R^2_{adj}$
$\Delta GDP_t$	0.015 (0.45)	0.344* (1.82)	40.5 (0.77)	-307.1** (-2.21)	0.388* (1.96)	-0.867** (-2.03)	-1.039*** (-4.28)	0.773 [0.00]
$\Delta GCF_t$	0.041*** (3.10)	-0.139* (-1.86)	-39.8* (-1.92)	-58.0 (-1.06)	0.131* (1.67)	0.110 (0.65)	-0.373*** (-3.90)	0.496 [0.00]
$\Delta NS_t$	-0.091*** (-5.80)	0.081 (0.92)	145.8*** (5.92)	545.2*** (8.39)	-0.056 (-0.61)	0.168 (0.84)	0.256** (2.26)	0.585 [0.00]

Author's calculations. Coefficient t-statistics are reported in round parentheses. The final column reports the adjusted  $R^2$  measure of fit and, in square brackets, the p-value associated with the F-test of the regression. In each regression the degrees of freedom are 7 over 56. Significance levels \*, \*\*, \*\*\* indicate rejection of the null hypothesis with 10%, 5% and 1% confidence, respectively.

The final column Table 4 evidences the importance of the financial crisis's structural break for these time series. Although,  $R^2_{adj}$  has declined slightly to 50% for  $\Delta GCF$  and risen a mere 1 percentage point for  $\Delta GDP$ , the fit to the Net Savings series has jumped from 10.9% to 58.5%. This has, of course, come along with a rise in significance of the  $\Delta NS$  equation to the 0.1% level.

The results presented in Tables 3 and 4 demonstrate that the data generating process is better captured by (4') than by equation (4). Not only does the fit of the series – particularly  $\Delta NS$  – increase, but the significance of coefficients are improved in nearly every case. This finding accords with the structural break tests performed in pretesting and with the history of the recent global financial crisis. It would appear that the dynamics of output, private investment and household savings are closely, and inevitably, entwined. Given the low level of households' Net Savings vis-à-vis enterprise capital formation

discussed in section 2, the strong relationship somewhat surprising. Yet, this would be forgetting that we are testing the transient relationships between these variables. Therefore, while there can only be a small long-term aggregative impact of Net Savings on GCF, they clearly covary with each other and with GDP. We now turn our final test for weak exogeneity of each of the series.

## 4.2 Causality Analysis

As a final check on the interrelationships between GDP, gross capital formation by private enterprise and household's Net Savings we employ a causality test specific to cointegrated systems known as weak exogeneity. The methodology of the test is to impose additional cointegrating restrictions on the loading matrix,  $\alpha$  in equations (4) and (4'), and to check whether the new restriction holds. For exogeneity testing this amounts to imposing a zero weight on one variable and equal weighting on all others. If the zero weighting restriction can be rejected then that variable is not exogenous to the system (Pfaff 2008, sec. 8.1), implying a causal relationship of that variable to the cointegrated system. The weak exogeneity test is employed for each possibility of our 3-dimensional system with two cointegrating relationships by imposing a zero weight to 'drop' each variable in turn.

**Table 5:** Weak Exogeneity Tests of the VEC Models

Dropped Variable	Standard VECM		Level Shift VECM	
	$\chi^2(2)$	<i>p</i> -val	$\chi^2(2)$	<i>p</i> -val
Net Savings	3.58	0.17	4.00	0.14
GCF	5.25	0.07	13.56	0.00
GDP	12.49	0.00	18.75	0.00

Author's calculations. The test statistic has a  $\chi^2(r \cdot (K - m))$  distribution, where  $m$  is the number of restrictions imposed. Hence there are 2 degrees of freedom in each test.

The results of the the exogeneity test are reported in Table 5. The clear implication of this test is that Net Savings is an exogenous variable. In both the standard VEC model and the level shift extension, the null hypothesis of a zero weighting on Net Savings cannot be rejected at any standard confidence level. In other words, the system can be reduced to an  $m$ -dimensional system, where  $m = 2$  for the two equal weights imposed on GDP and GCF. By contrast, the VECM restrictions that drop GDP are rejected at the 1% level for both models, while the GCF-dropping restrictions can be dropped at the 10% level for the standard model and at the 1% level for the level shift model. We therefore conclude our that GDP, GCF and Net Savings form a tight cointegrated system, but that Net Savings is not an endogenous, irremovable element. In other words, Net Savings has a correlative relationship with growth and business investment, but not an essential, and much less a causal, impact on microeconomic performance.

## 5 CONCLUSION

Updating the NIPA adjustments for households' actual transactions behavior, first conducted by Ruggles and Ruggles (1992), showed that their findings of highly variable, counter-cyclical and, on average, small levels of household Net Savings continue to hold through to the present. In section 3 we argued that these data demanded a reconsideration of the permanent income and life-cycle hypotheses of consumer behaviour. Specifically, the capital account of households is a more appropriate concept for understanding people's pattern of consumption and savings over their life times. Secondly, our data challenges the ubiquitous assumption of a savings-constrained economy. Section 4 provided extensive testing of the relationship between households' lending to other sectors, private investment and GDP only to find that only investment and economic activity are inexorably bound. The finding of household net savings as weakly exogenous strongly suggests that household lending is a passive exercise – rather it is current consumption and capital account expenditures over which households have control. Very few actively balance a portfolio between risky and non-risky assets. Rather households prefer to invest in consumable capital such as housing and durable goods.

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## APPENDIX A HOUSEHOLD SAVINGS AND ENTERPRISE INVESTMENT

**Table A.1:** Household Savings Adjustments Relative to Enterprise Capital Formation, 2009 \$US billions

Year	Household Sector			Enterprise Sector Gross Capital Formation	Household Net Lending / Borrowing (+/-) as % of Enterprise Gross Capital Formation
	Gross Household Savings	Household Gross Capital Formation	Household Net Lending / Borrowing (+/-)		
1948	268.28	267.76	0.52	174.99	0.24
1949	255.71	278.45	-22.75	159.35	-11.23
1950	333.32	353.61	-20.29	175.11	-9.02
1951	334.79	315.89	18.90	178.17	8.13
1952	331.62	306.94	24.67	178.98	10.53
1953	354.13	328.64	25.49	196.56	9.95
1954	337.50	330.16	7.34	193.66	2.91
1955	377.39	394.05	-16.66	215.35	-5.87
1956	401.28	375.08	26.20	230.49	8.32
1957	405.41	365.82	39.59	236.84	12.18
1958	389.05	338.04	51.02	219.31	17.29
1959	398.62	392.82	5.80	240.05	1.80
1960	394.20	381.77	12.43	250.21	3.75
1961	413.70	364.35	49.35	255.92	14.73
1962	444.37	394.65	49.72	280.98	13.66
1963	461.13	428.10	33.03	301.98	8.56
1964	519.25	457.90	61.34	333.76	14.50
1965	556.33	490.36	65.97	378.16	13.74
1966	576.28	498.43	77.85	416.60	14.78
1967	620.24	501.02	119.22	412.55	22.82
1968	640.23	552.94	87.29	440.28	15.63
1969	639.42	562.12	77.30	471.28	12.88
1970	679.51	527.99	151.52	468.24	25.50
1971	749.29	603.35	145.94	478.83	23.83
1972	764.99	679.27	85.72	521.43	12.75
1973	877.84	723.69	154.15	572.34	20.86
1974	821.81	635.84	185.96	561.67	25.76
1975	822.47	633.94	188.53	503.34	28.16
1976	837.56	740.39	97.17	532.21	13.69
1977	843.55	832.50	11.05	588.64	1.39
1978	890.89	878.29	12.60	667.40	1.38



Year	Household Sector			Enterprise Sector	Household Net
	Gross Household Savings	Household Gross Capital Formation	Household Net Lending / Borrowing (+/-)	Gross Capital Formation	Lending / Borrowing (+/-) as % of Enterprise Gross Capital Formation
1979	881.85	845.38	36.47	733.65	3.64
1980	853.57	729.88	123.69	717.32	12.78
1981	890.77	702.98	187.79	756.36	18.35
1982	891.22	664.89	226.34	717.06	23.31
1983	854.41	790.44	63.97	725.41	6.77
1984	1,046.62	889.25	157.37	843.64	14.71
1985	989.76	934.70	55.07	899.29	4.93
1986	1,051.76	1,030.06	21.71	887.83	1.96
1987	1,003.63	1,058.17	-54.55	874.44	-5.06
1988	1,077.63	1,087.95	-10.32	904.28	-0.93
1989	1,067.38	1,070.08	-2.70	947.67	-0.24
1990	1,042.11	1,009.19	32.92	949.67	2.95
1991	1,024.40	934.10	90.30	900.32	8.66
1992	1,080.33	996.78	83.54	924.39	8.01
1993	1,048.59	1,065.37	-16.78	993.88	-1.52
1994	1,085.07	1,163.24	-78.16	1,066.47	-6.61
1995	1,126.03	1,163.20	-37.16	1,169.16	-2.88
1996	1,180.68	1,230.44	-49.76	1,264.65	-3.64
1997	1,177.57	1,272.41	-94.84	1,380.22	-6.45
1998	1,334.93	1,389.97	-55.04	1,502.74	-3.49
1999	1,288.53	1,501.66	-213.14	1,637.13	-12.54
2000	1,330.07	1,556.12	-226.05	1,762.43	-12.48
2001	1,433.38	1,623.27	-189.90	1,665.24	-11.20
2002	1,611.69	1,697.22	-85.52	1,537.00	-5.52
2003	1,663.09	1,777.89	-114.80	1,550.55	-7.39
2004	1,690.86	1,919.06	-228.21	1,604.31	-14.09
2005	1,544.48	2,020.49	-476.00	1,702.04	-27.30
2006	1,672.26	1,980.15	-307.89	1,792.91	-16.57
2007	1,670.98	1,814.52	-143.54	1,880.39	-7.41
2008	1,833.97	1,519.79	314.18	1,865.15	16.69
2009	1,868.52	1,339.10	529.42	1,562.80	33.88
2010	1,796.90	1,363.01	433.89	1,604.15	27.72
2011	1,907.52	1,386.20	521.31	1,734.75	31.12
2012	1,975.39	1,464.01	511.38	1,881.89	28.28
<b>Total</b>	<b>60,736.13</b>	<b>57,925.14</b>	<b>2,810.99</b>	<b>53,773.91</b>	<b>5.23%</b>

# APPENDIX B DETAILED RECREATION OF RUGGLES AND RUGGLES' ADJUSTMENTS

Documented Recreation of Ruggles & Ruggles' Adjustments in Table 1

	Income	Outlay	Savings	Source and Notes
1 <b>NIPA, US personal income and outlays accounts</b>	<b>4,384.3</b>	<b>4,212.5</b>	<b>171.8</b>	<i>SCB</i> , Account 2. Personal Income
1b: Taxes		658.8		<i>SCB</i> , Account 2. Personal Taxes
1c: Outlays		3,553.7		<i>SCB</i> , Account 2. Personal Outlays
2 <b>Non-Profit Institutions</b>	<b>-53.7</b>	<b>-53.7</b>	<b>0.0</b>	
3 Less: Investment & imputed rental income	-43.2			T.B.D.; in <i>SCB</i> , Table 8.9, lines (99) corresponds to one element in original (= \$26.8)
4 Less: Business and Government Transfers	-10.5			T.B.D.; likely in <i>SCB</i> .
5 Plus: Owner-occupied expenses		-168.4		Derived: [2]-[6]. Ruggles and Ruggles derived this for want of actual data. They assume NPISHs have zero savings.
6 Plus: Household contributions to non-profits		114.7		<i>Statistical Abstract of the United States</i> , table No. 627, line (1): Total Funds
7 <b>Owner-Occupied Housing</b>	<b>89.2</b>	<b>0.0</b>	<b>89.2</b>	
8 Less: Imputed net rental income	23.4			<i>SCB</i> , Table 8.9, lines (91) + (98)
8a: non-farm, owner-occupied housing	-27.4			(91) rental income of persons with CCadj

Documented Recreation of Ruggles & Ruggles' Adjustments in Table 1

	Income	Outlay	Savings	Source and Notes
8b: farm, owner-occupied housing	4.0			(98) Proprietors' income with IVA & CCadj
9 Less: imputed space rental		-371.1		SCB, Table 8.9, lines (84) + (92)
9a: non-farm, owner-occupied housing		361.7		(84) Space rent
9b: farm, owner-occupied housing		9.4		(92) Space rent
10 Plus: Owner-occupied expenses		356.0		SCB, Table 8.9, lines (85) + (88) - (89) + (90) + (93) + (96) + (97)
10a: non-farm, owner-occupied housing		45.5		(85) intermediate goods & services consumed
10b: non-farm, owner-occupied housing		61.1		(88) indirect business tax and non-tax liability
10c: non-farm, owner-occupied housing		0.1		(89) subsidies
10d: non-farm, owner-occupied housing		196.5		(90) net interest
10e: farm, owner-occupied housing		1.7		(93) intermediate goods & services consumed
10f: farm, owner-occupied housing		0.3		(96) indirect business tax and non-tax liability
10g: farm, owner-occupied housing		0.6		(97) net interest
11 Plus: imputed housing services (gross)	71.3	71.3		Derived: [9]+[10]
<b>12 Employer pension funds</b>	<b>-56.1</b>		<b>-56.1</b>	
13 Less Employers' pension contributions	-58.6			SCB, Table 6.13, lines (21) + (24)
13a: private pension & welfare funds	47,768			(21) Pension and profit-sharing [millions]
13b: private pension & welfare funds	10,794			(24) group life insurance [millions]

Documented Recreation of Ruggles & Ruggles' Adjustments in Table 1

	Income	Outlay	Savings	Source and Notes
14 Less: pension fund earnings	-161.9			Table 8.8, line (50): Imputed rent to persons
15 Plus: Pension benefit payments	164.4			Table 6.13, lines (29) + (31)
15a: private pension & welfare funds	154,328			(29) Pension and profit-sharing [millions]
15b: private pension & welfare funds	10,142			(31) group life insurance [millions]
<b>16 Household capital formation</b>	<b>340.7</b>	<b>-133.9</b>	<b>474.6</b>	
17 Less: Consumer durable outlays		-474.6		SCB, Table 2.2, line (2): Personal Consumption Expenditure (=–[22])
18 Plus: imputed durable services (gross)	340.7	340.7		FoF, 'Income & Product Distribution', line (73)
<b>19 Household gross income, current outlays and gross savings</b>	<b>4,704.4</b>	<b>4,024.9</b>	<b>679.5</b>	Derived: [1] + [2] + [8] + [12] + [16]
<b>20 Household gross capital formation</b>		<b>662.6</b>		
21 Purchases of owner-occupied housing		188.0		SCB, Table 8.9, lines (118) + (119)
21a: other		184.0		(118) net purchases of owner-occupied homes
21b: other		4.0		(119) margins on owner-built homes

## Documented Recreation of Ruggles &amp; Ruggles' Adjustments in Table 1

	Income	Outlay	Savings	Source and Notes
22 Purchases of consumer durables		507.0		<i>SCB</i> , Table 2.2, line (2): Personal Consumption Expenditure ( $=-[17]$ )
23 Household net lending			16.9	Derived: [19, Savings] - [20]
24 Enterprise gross capital formation		583.2		<i>SCB</i> , Table 5.12, line (1) - (Table 8.9, lines (118) + (120))
24a: Fixed Investment		742.9		Table 5.12, line (1): Total Fixed Investment
24b: other		-184.0		Table 8.9, line (118): net purchases of owner-occupied homes
24c: other		-20.7		Table 8.9, line (120): net purchases of buildings and equipment owned and used by NPISHs
25 Household net lending as a percentage of enterprise gross capital formation			2.9%	Derived: [23] $\div$ [24]

*Sources:*

Bureau of Economic Analysis, *Survey of Current Business (SCB)*, Vol. 70, No. 7, July 1991.

Federal Reserve, *Flow of Funds Accounts, Second Quarter, 1991*. Z1

Bureau of Economic Analysis, *Statistical Abstract of the U.S. 1991*. Z1

*Note:*

The row numbers correspond to the rows in Ruggles and Ruggles Table 1.

Row numbers in parentheses “( )” indicate rows in source material.

Square brackets “[ ]” refer to rows of the present table.



# A Leacockian View Of Economics Today

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## Abstract

*Stephen Leacock published a book called Nonsense Novels in 1911. Drawing mainly on the stories in that volume (and indeed employing the same titles), and also on some other of Leacock's writings, the ensuing offerings are a re-telling of the Leacock pieces employing themes in economics and economics-related matters. It is worth recalling that Leacock himself was an economist, being, in real life, Professor of Political Economy at McGill University, Canada. The excuse for the present set of imitations of imitations is that the author, like Leacock, was also a professor of Economics who had to retire for reasons of growing old but not (just as in Leacock's case) for reasons of growing up: as Leacock said in his Preface to his Nonsense Novels, 'The reviewers...were good enough to express the thought that when the author grew up and became educated there might be hope for his intellect. This expectation is of no avail. All that education could do in this case has been tried and has failed. As a Professor of Political Economy..., the author admits that he ought to know better.' So ought the present writer, but what contributed to Leacock's Literary Lapses (if not to his Political Economy) should be bad enough to contribute to the present writer's own lapses, too.*

## 1 MADDENED BY MYSTERY

It was on a wild and wintry evening of the year '15, I find recorded in my notebook, that the world first became acquainted with that chain of singular circumstances which led to the arrival, in the drawing room of our humble quarters, of an entity that at first sight appeared to be a drone but turned out, when once the disguise had been penetrated, to be, instead, the President of the United States of America, who found my friend swathed in a mouse-coloured dressing gown, his eyes concealed behind a pair of violet goggles, his upper lip adorned by a luxurious red false moustache, and his head wreathed in clouds of smoke from a Meerschaum filled with shag stuffed from a Persian slipper.

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\*The second item in this essay ('The Conjuror's Revenge') appeared earlier in the *Economic and Political Weekly* (50:45, November 7, 2015), written under the author's pseudonym of 'Toothcomber'.

“Pray take a seat,” said the Great Detective, “and let me know, in your own words, while omitting no detail, however slight, what has fetched you from the city of Washington in the District of Columbia to Baker Street in the city of London.”

The President gave a violent start. “How do you know I’m from Wash\_\_?” he began, when he was cut short impatiently by the Great Man:

“Tut, man, your boarding pass is sticking out of your pocket, apart from which those ears, made familiar to the point of despair by photographs in the daily newspapers, are too prominent to mistake. The case now, if you will.”

“I have not the time to tarry,” said the President, “busy as I am, conducting drone attacks on the civilian population with very occasional collateral damage to the real targets. Suffice to say that a neo-Keynesian who has been strenuously recommending a stimulus package for the economy has been found strenuously murdered in his study.”

“Are the police,” asked the Great Detective, “and the CIA and the FBI baffled beyond endurance? Does the case have international ramifications beyond imagination? If unsolved, will the case trigger World War III in the next 19-and-a-half hours? Does it involve some of the most distinguished names in America, Europe and the rest of the world, or at least some of the less distinguished names? Do you have anything to add?”

“In response to your first four queries,” replied the President, “Yes, yes, yes, and yes. In response to your fifth query, my Intelligence sources advise me that the list of suspects has been narrowed down, for reasons we need not get into now, to three persons: a Syrian terrorist, the former President of the U.S., and a Professor of Economics at Chicago University. Your travel has been arranged, and I will be personally indebted to you if you should take the next flight to D.C. and investigate the case.”

“Very well,” said the Great Detective, adding, as he turned to me, “Pray pack a valise containing a few false beards, three pairs of goggles, twenty-three dressing gowns, my magnifying glass, the chemistry kit, a knife to skewer my correspondence with, a gasogene, a decanter, an Inverness cape, a deer-stalker, and some dog-biscuits for yourself.”

In some hours, the Great Detective and I were in Washington, D. C. Upon his asking, the Great Detective was led to the murder victim’s body in the mortuary. The Great Detective put on his deer-stalker, he affixed a green moustache to his upper-lip, and with the additional disguise of a red clown’s nose, he threw himself upon the ground, sniffed the air, and crawled, on all fours, to the body, which he submitted to minute examination through the wrong end of his microscope. “Ha!” he said, his eyebrows wagging, his nose quivering, and his voice quivering, “Ha! Ho! Hum! Ha-ha!”

Suddenly, he flung himself up and unwinding his long, thin frame while simultaneously helping himself to a maroon moustache and a pair of pink glasses, he said: “That was a pretty three-pipe problem which I have succeeded in addressing with a single Meerschaum. The case is solved.”

“My dear fellow! Who did it?”

“Obviously not the Syrian terrorist, since he has a perfect alibi by virtue of having



been in Syria at the time of the murder. Observe the marks on the body, which clearly indicate that the victim has been murdered by first differentiating and equating to zero, and then differentiating again and confirming negativity. The murder, obviously, has been perpetrated by a utility-maximizer, punctilious in the employment of both first- and second-order conditions for an extremum. We can immediately rule out the former President as a potential suspect: he can hardly be credited with engaging in the differential calculus when he has difficulty adding and spelling. Who, then, given to fanatical utility-maximization, might be expected to do violence to a neo-Keynesian economist, if not a Professor of Economics from Chicago? Hold him, before he escapes...!"

Unnoticed, the Chicago Economics Professor had followed us into the mortuary, but Inspector Lestrade (who had accompanied us from London) was too quick for him. "Would you?" he snarled, attaching himself to the sullen Professor's collar, as the latter tried to sneak away quietly.

Back in the White House, the Great Detective had the Presidential Medal pinned to his breast. He was also quickly conferred Membership of the American Academy of Arts and Sciences, and granted both the Oscar and Emmy Awards. "Is there," enquired the President, "anything further we can do to honour you? A special edition of *American Idol*, perhaps? A Hollywood extravaganza, maybe?"

"Tut, man," said the Great Detective carelessly. "The work is its own reward," and, turning to me, "If I may trouble you now for the syringe bearing a bolus of the good old seven per cent solution, followed by the papers of the Fotherington-Cholomondoley Succession Case and then the Featherstonehaugh-Beauchamp Forgery Case...? Ah, thank you."

## 2 THE CONJURER'S REVENGE

The audience had assembled to witness the Great Poverty Escape Act, conceived, sponsored, funded and executed by the Global Magical Moneylenders' Guild of Reconstruction and Dissimulation under the inspiring leadership of the Great Conjuror, whose official designation was that of Head of the Research Committee of the Department of Mysteries in the Ministry of Magic ( with registered country offices in the world-wide branches of the Hogwarts School of Witchcraft and Wizardry), aided by the services of the International Stooges' Federation of Hand-Waving Economeretricians<sup>1</sup>.

"Now, ladies and gentlemen," said the Great Conjuror, "I shall produce very little out of a great deal – 902 million poor people in 2012 out of 1959 million poor people in 1980. We are ahead of schedule in meeting Millennium Development Goal 1. Presto!"

People everywhere in the audience were saying, "Oh, how marvelous! How did he do it?"

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<sup>1</sup>Martin Gardner is rumoured to have been present at the Federation's naming ceremony

But the Quick Man on the front seat flung himself on his favourite idea and whispered madly in all directions: “He – had – a – particularly – low – poverty – line – up – his – sleeve.” And the people in the audience nodded sagely and sent the whisper flying to every corner of the hall: “He – had – an – extra-small – poverty – line – up – his – sleeve.”

“My next trick,” said the Great Conjurer “is the famous Hindostanee Vanishing Numbers Trick. I shall now cut the Indian poverty headcount ratio by a further 20 per cent. *Choo mantar!* Also Presto!”

The audience reacted dazedly to this bold decapitation, until the Quick Man whispered: “He – had – a – sub-Tendulkar-Committee – Poverty – Line – up – his – sleeve.” And everybody agreed and whispered: “Yes – he – had – a – sub-Tendulkar-Committee – Poverty – Line – up – his – sleeve.”

The Great Conjurer’s Olympian brow developed a furrow or two or three, as he continued: “I shall now amuse and entertain and gratify you with the Modified Hindostanee Vanishing Numbers Trick whereby I shall cut the Indian headcount ratio by an even more daring 10 per cent. Will one of the obliging Economeretricians kindly lend me his wand? Ah – thank you – Presto!”

He cut the headcount ratio by a further 10 per cent, one per cent at a time, and for thirty-five seconds the audience was spell-bound, until the Quick Man whispered: “He – had – a – Modified – Mixed – Recall – Period – up – his – sleeve,” and all the people in the audience passed it on: “He – had – a – Modified – Mixed – Recall – Period – up – his – sleeve.”

The headcount trick was ruined.

Through the show, it went on like that. It transpired from the whispers of the Quick Man that the Great Conjurer must have had hidden up his sleeve, apart from a minuscule global poverty line, a sub-Tendulkar-Committee Poverty Line and a Modified Mixed Recall Period, also stacks and stacks of bogus Purchasing Power Parity equivalences, an entire Calorie Drift, several scores of country-specific Poverty Thresholds of which only the lowest 15 were used, a live (or at least only semi-moribund) poverty expert, an inventory of spurious regressions, hundreds of consumer price indices that failed to measure inflation, a Mainframe Super Computer capable of delivering a thousand doctored aggregate headcounts per second-squared, a full band for musical side-effects, a troop of cheer-leaders, a copy of Harry Frankfurt’s *On Bullshit*, and a crammer’s guide to *Advanced Economicstricks*.

The Great Conjurer’s and the Federation’s reputations were in tatters. At the end of the show, the Great Conjurer made a final effort to salvage what he could of the evening.

“Ladies and gentleman,” he said, “I will now conclude the evening’s entertainment with the celebrated Icelandic trick invented long ago by India’s *tantric* votaries of *kundalini*, whereby,” turning to the Quick Man with a smile of chillingly suave savagery, “I shall now, with this gentleman’s permission, do indescribable things to his collar, his hat, his watch and his coat. If I may, sir?”

“Of course you may,” said the Quick Man with an affable smile, “but I can save everybody a lot of time and bother by confidently asserting that you will have done those indescribable things with the help of a cigarette lighter, a pair of gardening shears, a pair of dancing shoes and a pot of green paint hidden – up – your – sleeve.”

And once more the whisper went round the hall: “He – has – all – those – things – up – his – sleeve.”

Amid a burst of dispirited music from the orchestra, the curtain descended upon the evening’s edification, and the audience dispersed, convinced that there is not a trick in the book, especially when it comes to performing a Houdini Act on Global Poverty, which is not done up the Great Conjuror’s sleeve.

### 3 “Q.” A PSYCHIC P STORY OF THE PSUPERNATURAL

What I am about to relate is the true but incredulous, by which I mean incredible, experience I had of phantasmal phinancial phlows in the ghastly gothic globalized world of ghostly go-betweens operating from beyond the grave. (These are examples of alluring alliterations, but that is another matter, whereas we are here concerned with the immaterial or spirit world, also known as the non-corporeal realm of miasmic manifestations, or perhaps something else.) Let me begin at the beginning, passing up the temptation of starting earlier. It began with my meeting A, on his invitation, in his chambers, at 4:52 P.M. precisely, on December the 23rd, a date and time which are graven in my memory if for no other reason than that I am not forgetful, either by nature or by design, assuming that means anything. A was a precise, unemotional, dry-voiced, dry-faced, drip-dried individual who worked in some mysterious import-export business that dealt, as far as one could tell, with things that were Free on Board or involved Cost, Insurance and Freight, Bills of Lading and Letters of Credit. One would have scarcely associated this seemingly unimaginative and unsentimental man with astral phenomena or preternaturally paranormal events – with, in a word – ghosts, but then there we are.

In a quiet and even voice, A told me that his old, late friend (or late, old friend) Q, who had passed on (by which I mean expired) some years ago, seemed to be making an effort to get in touch with him, A, from the spirit world. “Addicted as Q had been to the world of shady transactions and tax havens all his adult corporeal life,” A opined, “his premature death left in its wake a restless unsatiated spirit that would not rest quiescent in the knowledge of its unrealized potentialities for advancing the cause of illicit financial flows. I have been given an imitation, or intimation, of A’s desire to get in touch with me. My attention was drawn from the reverie on illegal discounted cash flows into which I had fallen while sitting at my desk the other evening, by the sound of three sharp raps, as upon the table. Like this,” added A, rapping the wooden desk sharply and causing me to bite my tongue and jump out of my skin. Re-entering my skin, I heard A relate the following singular tale:

“By projecting himself through the ouija board of a psychic medium, Q was able to communicate with me. I could hear him tell me distinctly enough, through the crackling static of the nether world, the following: ‘If you will arrange for my friend X to receive a million units of local currency, I will arrange, through the good offices of Z, to have the equivalent foreign exchange (at a premium, of course) in dollars transferred to a numbered account in Delaware, from where it will be distributed amongst several other numbered accounts, opened in the names of shell companies, in various banks in the Caymen Islands, the Channel Islands, the Isle of Man, Mauritius, the Guernsey and the Channel Islands and Switzerland, all proxying for you, of course, my dear fellow. The funds can be repatriated, in a round-tripping arrangement, by way of bogus foreign investment. Just find those million units of local currency, and you will be in business.’ The problem, of course, is that I am not a millionaire, whereas you are. How about it? Will you invest a million local currency units, at no risk to yourself and with the prospect of a premium-bearing foreign exchange return in the bargain, in the cause of advancing the frontiers of knowledge and experience beyond this constraining world of mere material possessions to the world of the spirit and the Great Beyond?”

For a moment I was spell-bound; for another moment, dumb-struck; and for a third moment, tongue-tied. Taking just one more moment off for speechlessness, I recovered my wits and my voice. “Why, of course I will,” I replied. “It would be a pleasure to participate in this great scientific experiment!”

“Well then, meet me again with a million smackers tomorrow, same place, same time. Only, the transaction must be conducted entirely in cash.” A lowered his voice as he said in a tone of affectionate recollection: “Q always dealt only in cash, and we don’t want his sensitive spirit to be offended by negotiations through cheques, do we?”

“No, of course not,” I said, in sympathetic identification.

Next day, I passed on a million notes in cash to A. I did not, of course, understand a word of what A said, about Delaware and the Caymen Islands and numbered accounts and shell companies and round-tripping and foreign portfolio investment, but I gathered it was all in the cause of science and an alternative reality in the World Beyond. I was repeatedly struck by the strange and eerie significance of Q getting in touch with A to get in touch with me on the third day of every month of the subsequent six months, with the request, on each occasion, to come prepared to part with a million notes in cash, now for under-invoicing exports, now for over-invoicing imports, now for a spot of transfer-pricing, now for a dash of what A in a sepulchral voice said was financing trade in narcotics, and now again for a round of investment in human trafficking. As I have said, I had no notion of what all these financial transactions meant, except that they were part of this awesome experiment in establishing an ethereal reality, an experiment of which I was proud to be a part.

The culminating mystery occurred at the end of the sixth month. A vanished, as it were, into thin air, leaving no trace of his whereabouts (or of course of my millions). I was

convinced that he had been sucked up in an osmotic force and into the void of the great spirit world, to be united once more and forever with his great friend Q. I was correct in my speculation. A few days hence I received a confirmatory telephone call. I heard A's voice, as if emanating from the pits of the alien world, assuring me that he was now with Q in another country of the spirit. He counseled me not to mourn my lost millions, for it had all been in a great and wonderful cause. I was then, and continue to remain, convinced that A was a martyr to the experiment he had conducted with such courage and steadfastness, and that my experience was but a testament to his commitment to the truth.

After all, and as he assured me, my millions were but a paltry fraction of the twenty-five trillion dollars that had escaped the developing world in illicit financial flows.

#### 4 A HERO IN HOMESPUN: OR, THE LIFE STRUGGLE OF HEZEKIAH HAYLOFT

The Chairman of the Department also occupied the Chair of Advanced Mathematical Economics and Economic Theory. It was on this Chair that he was sitting when a fresh-faced lad entered his study. It was Hezekiah Hayloft. Hezekiah was entirely in homespun. Hezekiah also carried a carpet-bag in each hand, and the notion in his head that it was a good idea to come to New York in search of an education that would make him an economist capable of understanding and solving the problems of poverty and inequality and unemployment and inflation. He asked the Chairman if he might register for a Ph. D. under him. The Chairman found something engaging in the lad's wistful expression. It might almost be said that he saw his own younger self of long ago in the person standing before him. He threw an ink-pot at him, and him out of the study.

Wandering down the corridor, Hezekiah encountered the college Chaplain and enquired if he, the Chaplain, would pray for him, Hezekiah, to find a berth in the Department to do research on social security for the poor. The Chaplain, in a voice inarticulate with rage, said something about how the wretched lad would be better off studying the properties of unstable equilibria in epsilon environments, but seeing that he was incapable, the Chaplain said that what was indicated was not so much prayer as a good hiding and, suiting the action to the word, he set violently upon Hezekiah and beat the stuffing out of him.

The Chaplain, in his old age, was less thorough than he had been in his youth. He hated to leave a job half done. He entrusted the completion of the commission to the janitor. The janitor was happy to suck Hezekiah up in his vacuum cleaner and then spit him out.

Dejected but not defeated, Hezekiah wandered further down the corridor and button-holed one of the three Nobel laureates the Department boasted. Expressing a desire to study the importance of the minimum wage for worker welfare, he was confronted by the

query, addressed in a voice of thunder by the laureate, whether Hezekiah could handle Hausdorff dimensions and Banach spaces in the cause of demonstrating the uniqueness of stable steady states in the core of a competitive economy yielded by the non-degenerate intersection of  $n$ -manifolds. Hezekiah answered truthfully: "I can often add with varying success, occasionally subtract, and more rarely do a sum in long division. But I am prepared to work hard and learn." The laureate, thereupon, chewed off his ear, kicked him several times in the hind-quarters, and sent him on his way – but not before he had arranged for Hezekiah to run the gauntlet of the Department's 21 graduate students of whom three were female all-in wrestlers specializing in subgame perfect coalition proof Nash equilibria.

Gradually, with the passage of time and repeated exposure to insults, kicks, bites, dusts and ink-pots, a change came over the lad: he became embittered and hardened. Thrusting his substantial jaw out, he muttered to himself: "I will succeed yet, by foul means if not fair; yes I will – by Jupiter, by Friedman, by Barro, by Muth!" So saying, he systematically broke into the rooms of the senior faculty and stole all the results of their work in progress.

Before he knew it, Hezekiah was in possession of 132 lemmata and 193 theorems on the super-neutrality of money, the inefficacy of fiscal stimulus, the efficacy of macroeconomic stabilization and structural adjustment, the necessity of debt-recovery by force and violence, the hyper-optimality of unfair trade practices, the multidimensional nature of lies about global poverty, and the incentive-compatible uniqueness of growth equilibria without foreign aid. What is more, he boldly published his stolen results in the most prestigious journals of the day. He was hired by several supra-national institutions such as the Global Bank, the International Trade Organization, and the World Monetary Fund to destroy several developing economies, which he did. His success knew no bounds. His reputation grew and grew. It was only a matter of time before he was offered permanent tenure in the Departments of several Ivy League Colleges, which vied desperately with each other to hire him, and bid his remuneration up in the bargain. The very men who had sneered at him now groveled at his feet. It was Hezekiah who now brandished the ink-pots.

To keep his reputation going, Hezekiah had to hire several research assistants and graduate students, from all of whom he stole his ideas and his scientific papers. When one of the students delayed the proof of a lemma, Hezekiah shot him through the waistcoat. He came to stand his trial in court. The prosecuting attorney, the witnesses, the judge, the jury and the press were all very sympathetic to Hezekiah. The court found in his favour and awarded him damages. However, the verdict was challenged in the Supreme Court on a writ of *mandamus*, followed by a writ of *certiorari*. There the case now stands, at the end of twenty-three years and 1,912 adjournments.

Meanwhile, Hezekiah was appointed President of Halfward University whose funds he speculated with for his private gain and which he sensibly invested in the cause of his election to the State Senate.

Hezekiah Hayloft's life struggle will soon culminate with his election as President of the country.

THE END





## Book Review:

*Capitalism: Competition, Conflict, Crises*, by Anwar Shaikh  
(New York: Oxford University Press, 2016, pp. 976)

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Anwar Shaikh's *Capitalism: Competition, Conflict, Crises* is an extraordinary book which will transform the way in which economists, sociologist, historians and social scientists understand and study capitalism. It aims to develop a theoretical structure, rooted in the classical political economy tradition, appropriate to analyze the real operation of existing developed capitalist countries. Its broad object of investigation took the author more than fifteen years of writing and a whole life of studying economic theory in order to understand and reveal many of the secrets and hidden relations of capitalism. The result is undoubtedly an indispensable tool to understand economics and social relations in the XXI century.

*Capitalism: Competition, Conflict, Crises* is beautifully written and all arguments are clearly exposed allowing the reader to confront their ideas with the reasoning of the author along every step of the road. The book is organized in three main parts: Foundations of the Analysis (chapters 1-6); The Theory of Real Competition (chapters 7-11); and The Theory of Turbulent Macro dynamics (chapters 12-17). In the first part, after a useful introductory chapter where the author explains his goals and the structure of the book, Chapter 2 presents empirical evidence on characteristic long run economic patterns in advanced capitalist countries; while Chapter 3 takes up the methodological questions raised by the very existence of persistent long term patterns and develops the micro foundations for the analysis. Shaikh's goal is to answer the question of how it is possible for capitalist societies to generate recurrent aggregate patterns given that it is composed of mutable individuals embedded in evolving social structures. Chapter 4 deals with the study of the structure of social production, the role of active labor, the production at the level of the firm and the importance of distinguish between production relations and production functions when analyzing capitalism. Chapter 5 approaches the question of money, exchange and prices, and the author beautifully traces the evolution of money from its origins in exchanges until more recent forms such as state fiat money, allowing the author to develop a classical theory of money.

Finally, chapter 6 is a long chapter centered on the determination and measurement of profit and capital. It investigates the two sources of aggregate profit (from a transfer of

wealth and from the production of new wealth in the form of a surplus product) and it is demonstrated that changes in the relative prices of commodities generally have different impacts on the circuits of capital and revenue, and can give rise to transfers between the two circuits. The general framework is used to address financial profit arising from realized capital gains and other transfers. Overall, the first part of the book provides the theoretical arguments developed by Shaikh in order to understand the way in which capitalism works. It also reveals a crucial methodological aspect of Shaikh's approximation: he uses a methodology that moves from empirical evidence to theoretical development and then returns back to empirical evidence to test if the theoretical ideas are consistent with long run economic patterns.

The second part of the book analyses the process of real competition and involves five chapters. Chapter 7 presents the theory of real competition, which is the central regulating mechanism of capitalism. Shaikh studies this process at different levels (how it operates within and between industries) as well as the role played by regulating capital, and backs up his ideas with empirical evidence on the behavior of firms and on profit rate equalization. Chapter 8 confronts various alternative views of competition (Classical, Post Keynesian, Schumpeterian, Austrian and Marxian) and examines empirical evidence on pricing and profitability. Meanwhile, Chapter 9 focuses on competition and inter-industrial relative prices. Shaikh states that the prices of production are competitive relative prices generated by three essential processes: selling prices are equalized across sellers, labor incomes are equalized across workers, and profit rates are equalized across regulating capitals; all equalization is turbulent. Chapter 10 extends the classical approach to the theory of finance and the interest rate. The author focuses on the competitive determination of interest rates, extends profit rate equalization to equity prices, analyzes bond prices, and considers the related empirical evidence. In the final chapter of second part (Chapter 11), Shaikh extends the notion of real competition to international competition and the theory of exchange rates. Starting with a strong critique of the crucial premises of the theoretical foundations of orthodox trade theory, the author examines Ricardo's principle of comparative cost and shows that the theory of real competition has a very different set of implications for international trade from orthodox theory.

The second part of the book complements the first one and develops the dynamics of competition, the different views that exist on competition, the effects of it on relative prices and the specific way in which manifests itself in international competition and exchange rate theory. Thus, Shaikh develops the core elements of the theoretical framework, how the main variables are connected and influence each other, and the lines of continuity with the classical tradition as well as his main differences with other theoretical frameworks.

Finally, the third part of the book combines the theoretical concepts already developed with the study of actual and turbulent macro dynamics, with the aim of uncovering the linkages between real competition and effective demand. Chapter 12 reviews the rise of modern macroeconomics; it explores Keynes' General Theory and its capture by neo-

Walrasian economics with the ISLM model, and some new developments in the heterodox “imperfektionist” tradition. Chapter 13 takes up the task of building a classical approach to macroeconomics founded on real competition and the centrality of profits. Starting from a discussion among the Keynesian, Kaleckian and Postkeynesian views on the relationship between investment and savings and the role played by the multiplier, Shaikh studies the responsiveness of the savings rate and applies Soros’ theory of reflexivity in order to explain the connection between expected net profitability and actual net profitability. Chapter 14 derives the crucial linkages between unemployment, wages, profitability and growth; and addresses the capacity that workers have on wage bargaining. In light of this, Shaikh develops a framework in which accumulation is driven by profitability, it maintains a normal rate of capacity utilization alongside a persistent pool of unemployed labor, and labor struggles play a significant role in determining real wages.

Chapter 15 tackles the theory of inflation under modern fiat money. The chapter provides a review of the historical path from private money to state money, a detailed survey of chartalist and neo-chartalist claims about money, the effects and limits of fiat money, and a critical analysis of the crucial propositions of the neo-chartalist tradition. Once the general notions regarding fiat money are developed, Shaikh constructs a classical theory of inflation, which combines demand-pull and supply-side arguments. Chapter 16 provides a classical view of the economic crisis that swept across the world in 2007. Since crises are recurrent phenomena, Shaikh reviews the main characteristic of the UK and US accumulation process in order to explain the causes underlying the crisis, examines the general consequences of it, and presents his views on the policy debate on austerity versus stimulus. The final chapter of the book summarizes the main conclusions and addresses further implications. As this summary illustrates, the third part of the book combines previously developed elements while the author shows the specific way in which they are connected to each other. The result is the classical approach to macroeconomics, which is driven by profitability, a specific relationship between unemployment, wages, profits and growth, the theory of crisis, and the theory of inflation under modern fiat money.

The book masterfully shows that theory is crucial to economic analysis and policy. While neoclassical theory supports perfect competition, Say’s Law and full employment, and Post Keynesian economics starts directly from imperfect competition in order to build its macroeconomic theory and policy; Shaikh shows that his theory is appropriate to explain the intrinsic forces of capitalism, the essential conflicts, and the causes of booms and recurrent crises.

Every subject covered in *Capitalism*, from demand and supply, the determination of wage and profit rates, real competition, technical change, prices, interest rates, growth, capacity utilization, unemployment, inflation, to long booms and recurrent crises, is contrasted with corresponding neoclassical and Keynesian/Post Keynesian views, and confronted with empirical evidence. This comparison of theories allows the reader not only to discover the main assumptions and critical elements of each theory, but also to

understand the importance of each element and the differences between the theoretical frameworks.

Shaikh's book challenges the foundations of the main theoretical frameworks in economics. This can be illustrated by several examples. Firstly, the theory of real competition can explain the observed patterns that led Kalecki (and later Post Keynesians and Monopoly theorists) to posit markup pricing without requiring any resort to imperfect competition. Shaikh shows that the patterns of real competition arise not only from competition within an industry but also from competition between industries. According to the author, regulating capitals are the price-leaders in an industry and its price becomes the benchmark for market prices, while non-regulating capitals are price-followers and their profits are residuals, which depend on their own costs. The mobility of capital leads to the equalization of the profit rates of capitals on the best reproducible conditions of production (regulating conditions) in a turbulent and ceaseless process. Therefore, the equalization of regulating rates of profit implies that for regulating capitals, profit margins will be higher in industries with higher capitaloutput ratios. Insofar as industry average variables are correlated with regulating ones, one would expect similar correlations for the former. Kaleckian, Post Keynesian and Monopoly capitalism schools interpreted these patterns as evidence of imperfect competition (i.e. monopoly or oligopoly power); but Shaikh shows that this is the consequence of real competition.

A second example is that the theory of real wages can explain that the observed wage share is the result of social structure, which is achieved through labor struggle (unions, welfare state, etc.) and the degree of unemployment. Thus, a shift in the balance of forces can lead to changes in income shares. This is radically different from the Post Keynesian notion that relies on some form of monopoly markup pricing, where firms are assumed to determine their own share of profits in total costs (individually and collectively). Therefore, they also set the wage share, and at given levels of productivity, the real wage. This is of course also radically different from the neoclassical notion in which each factor of production receives its marginal product.

The final example relates to the classical theory of inflation, which is rooted in the practices of real competition and harks back to the Keynesian and Monetarist notion that increases in purchasing power result in increases in nominal output. In the classical theory of inflation the limit to real output growth comes from the degree of growth-utilization rather than through the degree of labor-utilization (employment rate) upon which neoclassical, Keynesian and Post Keynesian traditions rely. As a result, inflation is the portion of demand augmentation, which cannot be absorbed by supply growth, except that in Shaikh's scheme supply growth has a different determination.

The book is the result of a long process of work and several ideas have been advanced by the author in previous works. However, the value of the previous contributions is incomparable to the dimension of this book, as these ideas are combined into a comprehensive and unified theoretical framework. It is important to note that this book also

brings together a lot of new material that has never been published. Among the most important new topics are the new insights regarding the turbulent macro dynamics, the micro foundations, the classical theory of money, new developments regarding the choice of technique, the treatment of international competition as an instance of international choice of technique, the alternative treatment of fixed capital as a joint product, the discovery of the correct adding-up rule for chain indexes, the classical theory of finance, interest rates and stock market theories, the use of Soros's notion of reflexivity to understand some macro dynamics, the notion of an endogenous savings rate, the theoretical derivation of a wage-share curve as the classical equivalent of the Phillips curve and its empirical analysis, the new developments regarding the classical theory of inflation, and the classical account of accumulation that can explain the actual patterns leading up to the current crisis.

The book also sets up a research agenda that could be pursued further. Particular topics for future study are the link between profit-driven accumulation and recurrent long wave patterns, the patterns that turbulent equalization of prices and profit generates in each variable, the shapes and forms of wage distributions, the econophysics "two-class" theory of income distribution, and the relations between developed and developing regions of the world. Regarding this last issue, the book is relevant to the Global South, as the analysis of capitalism in its most developed form is essential for an adequate understanding of the relations between the developed, developing, and under-developed regions of the world. A central argument throughout the book is that the capitalist economic system generates powerful ordered patterns that transcend historical and regional particularities, and that the forces that shape these patterns are moving limits whose gradients define what is easy and what is difficult at any moment of time. Therefore, understanding these limits and how to move them is crucial to address the challenges that developing countries face, in order to improve the living conditions of people in the developing world.

Anwar Shaikh's magnum opus is the most important work of political economy since Marx's *Capital* and it will be a reference point for classical political economy for decades to come. With this book Shaikh not only provides an extraordinary interpretation of the world but he also succeeds in transforming the way we think of it.



# Call for Papers - Volume 10

## Special Issue:

### *Origins and Implications of Donald Trump's Economic Policy*

(Submission deadline: May 31st, 2017)

Ever since Donald J. Trump was sworn into office, ceaseless debates have been taking place among politicians and pundits about the various aspects of economic policy of the Donald Trump administration, ranging from across-the-board tax cuts to pulling out of NAFTA. While some elements of his proposal sound familiar, such as tax cuts, the repeal of (financial) regulations, or the aggressive fiscal policy (e.g. the trillion-dollar infrastructure spending), some are fairly new to the minds of 21st century economists. The latter includes the government-led reshoring (re-relocation of production base to the US) along with the anti-free trade policy, or the revival of the dying coal industry. Also, some part of his economic promises seem to echo with progressive economists' agenda, while the other are downright reactionary. For this unfamiliarity and ambiguity, economists appear to have trouble defining what Trumponomics is, even though it is imperative to do so considering the enormous effects this administration will make for the US and the world economy. Therefore, the NSER special issue seeks to initiate rigorous discussions on the origin and implications of Trump's economic policy to facilitate common understanding of the new regime we are facing now.

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**Important note: The New School Economic Review will accept papers for Volume 10 on a topic other than the Special Issue.  
Submission deadline is May 31st, 2017.**

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to, scholarly articles, commentaries, book reviews, guest editorials, and announcements. The papers will be reviewed by a committee of New School alumni. The NSER welcomes submissions from academics, practitioners and students of all levels seeking to broaden and strengthen the foundational structure of the study of economic systems. The NSER editorial board reserves the right to suggest both minor and substantive revisions to accepted works. Finally, following the standard practices of North American scholarly journals, the NSER is not in a position to offer payments for accepted and published manuscripts.



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