

Schumpeter Might Be Right Again: The Functional Differentiation of Credit*

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ABSTRACT

In his theory of credit and development, Schumpeter distinguished between credit flows to the productive sectors and credit to property and capital markets. This distinction was shared by Marx, Keynes, Minsky and Tobin. A first contribution of the paper is to apply this distinction to U.S. data and show that the growth in private debt in recent decades is due to growth in credit flows to property and asset markets. A second contribution is to show how logically and analytically, the growth effect of credit should be at its maximum around a bank-credit-to-GDP ratio of 100%. This is also an empirical finding in several recent papers. A third contribution is to assemble institutional evidence. The paper discusses five ways in which ‘too much’ credit has hurt rather than helped the economy, each linked to property and asset markets, following Schumpeter’s distinction. It studies debt-financed M&A waves; dysfunctional stock markets; increasing inequality linking to ‘financialization’ of the economy; housing-led growth; and the slowdown in investment. This neglected analytical contribution of Schumpeter and others is more relevant than ever to our world today.

KEYWORDS: Schumpeter, credit, growth, crisis

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Schumpeter Might Be Right Again: The Functional Differentiation of Credit

1. Introduction

Following King and Levine's (1993) seminal *Finance and Growth: Schumpeter Might Be Right*, a large empirical literature has established the positive growth effects of financial development in cross-country regressions. Schumpeter explained that growth and development require credit. For development to be realized, there must be additional liquidity advanced beyond the liquidity that circulates current output. "From this it follows", Schumpeter (1934:101) concluded, "that in real life total credit must be greater than it could be if there were only fully covered credit. The credit structure projects ... beyond the existing commodity basis." In other words, there must be growth in the credit stock (and therefore growth in debt) for economic development to be realized. Minsky, who studied with Schumpeter at Harvard, also concluded that "[i]t follows that over a period during which economic growth takes place, at least some sectors finance a part of their spending by emitting debt or selling assets." (Minsky 1982:6). This new credit is taken up in order to finance transactions, as is shown in an empirical study by Caporale and Howells (2001:555), who also confirm the direction of causality: "loans cause deposits and those deposits cause an expansion of transactions" – and therefore in GDP, which is the total value of final-demand transactions. Indeed, the Federal Reserve statisticians who compile U.S. financial statistics note in their guide to the U.S. flow of funds 'Z' tables that "[a]nalysts have found that over long periods of time there has been a fairly close relationship between the growth of debt of the nonfinancial sectors and aggregate economic activity" (Board 2013:76).

This function of providing liquidity for entrepreneurship is a key reason for the link between the credit system and GDP growth. Schumpeter wrote that 'the new combination of means of production and credit are the fundamental phenomena of economic development' (Schumpeter 1934:74). His revolutionary view is now widely accepted. Ang (2009) provides an overview of findings in the *Journal of Economic Surveys*, citing over one hundred serious empirical studies. The typical approach is to regress a credit-to-GDP ratio on GDP growth, in recent years also taking account of reverse causality, e.g. utilizing the Arellano-Bond estimator. This literature stresses that credit provision may facilitate productivity enhancing investments.

However, this is not all that credit does. Schumpeter (1939:147) also distinguished between credit's primary effect of inducing innovation and growth by direct loan provision

to the nonbank nonfinancial sector, and a secondary effect where most credit supports innovations on financial markets and in consumer loans, and where the effect on growth is ambiguous. Schumpeter (1934:179) excluded consumption loans explicitly from his theory of credit and its positive effect on development (see Reisman, 2005:69). He also separated ‘capital markets’ for stocks, bonds, mortgages, real estate and land (Schumpeter 1917:124) from ‘circulating money’ in the real sector (1917:176). In this he followed Marx, who in Chapter 30 of *Capital* titled “Money-Capital and Real Capital” distinguished between “credit, whose volume grows with the growing volume of value of production” (note the striking similarity with the Federal Reserve analysts quoted above!) as different from “the plethora of moneyed capital—a separate phenomenon alongside industrial production”.

Likewise, Keynes wrote on the distinction between ‘money in the financial circulations’ as distinct from ‘money in the industrial circulations’ (1930:217-218). James Tobin in his 1984 Hirsch Memorial Lecture spoke ‘On the Efficiency of the Financial System’, and also distinguished between the real-sector production of goods and services and financial activities. He disparaged that “... we are throwing more and more of our resources, including the cream of our youth, into financial activities remote from the production of goods and services”. And Minsky in his later years worried that what he called the ‘money manager capitalism’ that he saw emerging in the 1980s and 1990s undermined capitalism’s viability by redirecting investment to financial, not real investments and capital formation (Minsky 1987).

The main point of the present paper is that this distinction has not been taken on board in the contemporary credit-and-growth literature, with a handful of exceptions (Werner, 1997; Hudson 2006; Peetz and Genreith 2011, and authors discussed in Bezemer, 2010). And yet it has never been more relevant. In today’s world, we do indeed find a ‘plethora’ of credit instruments that has little directly to do with production. This is the debt built up due to credit flowing to the ‘finance, insurance and real estate’ or ‘FIRE’ sector, in the *US National Income and Product Classification* terminology. This includes property and myriad financial assets and instrument – connected to pension funds, savings institutions, credit unions, funding corporations, mortgage pools, exchange traded funds, private pension funds, money market mutual funds, and the like. This flow of bank credit to the ‘asset’ sector is emitted from banks and absorbed up front by the nonbank financial sector. Most of this never enters the real sector or directly finances physical investment or wages. Instead of providing liquidity to the economy, it may well drain liquidity from the economy, as Benjamin Friedman (2009) noted: “an important question—which no one

seems interested in addressing—is what fraction of the economy’s total returns ... is absorbed up front by the financial industry.” This paper therefore develops Schumpeter’s (and others’) distinction and presents evidence that it is relevant today. The key argument will be that this functional differentiation of credit helps understand recent findings on the ambiguous growth effects of financial development.

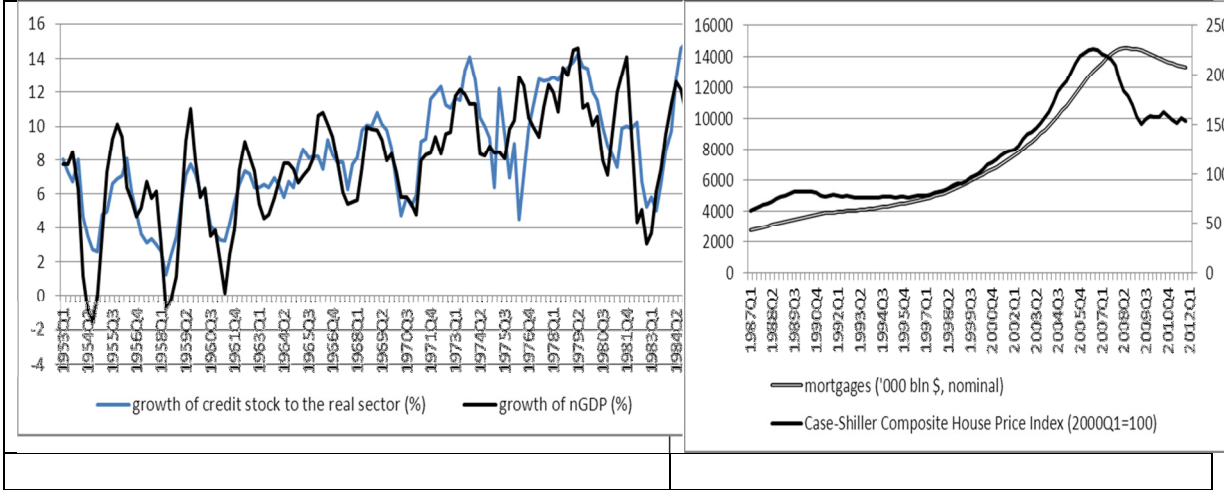
2. The functional differentiation of credit

Credit growth contributes to money growth since ‘banks actually create money when they lend it’ (FRBD, 2011). Banks extend loans, which give rise to bank deposits that are generally accepted as ‘money’. As the Federal Reserve explains, “[w]hat they do when they make loans is to accept promissory notes in exchange for credits to the borrowers’ transaction accounts. Loans (assets) and deposits (liabilities) both rise by the amount of the loan” (FRBC, 1992:3,6). Each act of bank lending creates a liability to some customer (a debt payable to the bank) and the accompanying asset (the bank deposit, which is money). But the way in which credit is used determines whether credit will support GDP growth. Since GDP growth is an increase in the total money value of all transactions in goods and services, this increase is equal to the increase in money used in these transactions. Growth in the money stock through bank lending to the real sector is the monetary counterpart of growth in nominal GDP (accounting for velocity of circulation). Figure 1 below illustrates this for the U.S..

The close correspondence between the two time series arises from the fact that an increase in the sum of all final goods-and-services transactions that make up the gross domestic product (GDP) requires the additional money that these transactions are conducted in – with ‘money’ being bank deposits arising from credit creation for the real sector. This is just the point Schumpeter and Minsky were making when they wrote that growth in the economy requires growth in debt/credit. Others have also noted this. Uhlig (2004) and Benk et al (2005) ask ‘what moves GDP?’ (the title of Uhlig’s paper) and conclude that credit is what moves GDP. Godley and Zezza (2006:3) observe on the US that “[m]ajor slowdowns in past periods have often been accompanied by falls in net lending. Indeed, the two series have moved together to an extent that is somewhat surprising...”. In fact, this is not an empirical coincidence, but implied in Schumpeter’s credit-and-development theory. Werner (1997; 2005) arrived at the same conclusion studying Japanese data, and so did the Federal Reserve, as noted in the introduction (Board, 2013). Figure one below illustrates.

This close correspondence with GDP growth does not hold for the growth of the *total* bank credit stock. Most credit is not bank lending to the real sector. We must “distinguish between different categories of credit, which perform different economic functions“, as the LSE *The Future of Finance* report urged in 2011. We can think of the economy as composed of a real sector where goods and services are produced and distributed, and a financial sector which may facilitate real sector growth, but does not produce goods and services itself (Werner, 1997; Peetz and Genreith 2011). Rather, its role is to originate and circulate financial claims. Banks also lend to those sectors in the economy whose function it is to manage wealth, not to produce goods and services – collectively known as the Finance, Insurance and Real Estate (FIRE) sector. Just as credit to the real sector provides the liquidity for increases in nominal GDP, so credit to the FIRE sector provides (in the first instance) liquidity for asset markets, not for the economy of goods and services that is measured in GDP. Therefore credit to an asset market within the FIRE sector does not closely track GDP, but asset market prices. In Uhlig’s words, FIRE-sector credit ‘does not move GDP’. For instance, mortgage growth moves house prices rather than GDP (Figure 1).

Figure 1: ‘credit is what credit does’: credit to the real and property sectors driving GDP and house prices.



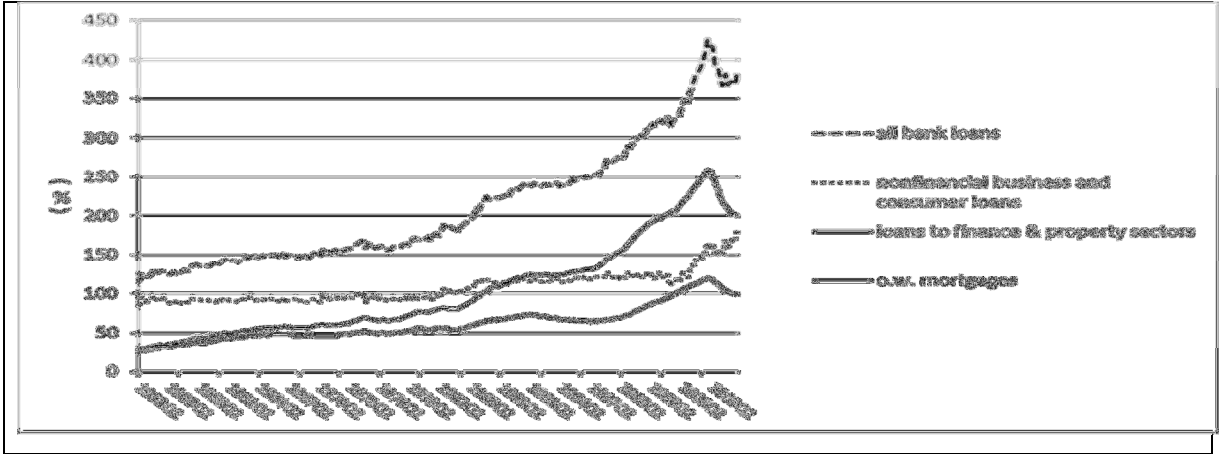
Source: BEA GDP data, the Case-Shiller Composite House Price Index. Note: We show credit and GDP growth until the mid 1980s. Afterwards this link was loosened as the U.S. economy financialized, which is not well captured in the traditional statistics (see Figure 2).

At issue is nothing more complex than the principle that ‘credit is what credit does’ - the distinction made by Schumpeter, Keynes, Minsky, Tobin and Friedman. But if credit to the

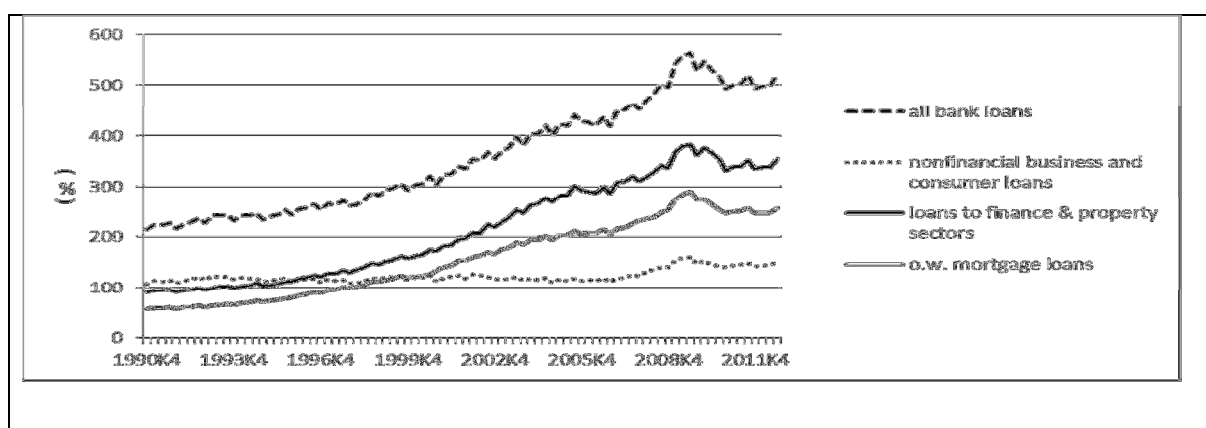
real sector causes growth in GDP, the question arises what are the effects of credit to the FIRE sector? This is the question explored in the present paper.

Part of the answer is that credit to the FIRE sector leads to growth not only in asset prices, but also in debt. One implication of Figure 1 is that the stock of credit to the real economy is about constant in proportion to the size of the economy. Figure 2 below shows for U.S. data that indeed the GDP ratio of bank credit to the real sector is quite stable in the long run. Since credit is also debt, this implies that debt creation in support of the real economy by definition does not raise the debt level in proportion to the size of the economy. Growth in the private debt burden - that is, growth in the GDP share of bank credit to the private sector – must therefore be due mostly to growth in credit to asset markets. With the GDP share of bank credit to the nonfinancial sector stable over time, any increase in the GDP share of total bank credit is mostly growth in credit to asset markets. Only during the great financial crisis after 2007 does the ratio increase, as GDP contracts. This is not specific to the U.S.; it can also be observed in data for other economies; in illustration, I include the same graph for the Netherlands¹.

Figure 2: Real-sector and FIRE-sector debt (% of GDP): the U.S. (1952-2012) and the Netherlands (1990-2012)



¹ Note that in the US after the mid 1980s, credit to the real sector moves to a higher plateau relative to GDP. In Grydaki and Bezemer (2013), we link this to the financialization of the U.S. economy, so that data on credit flows to the real sector are an increasingly distorted (overstated) measure for the growth in real-sector transactions. See also section 5 below.



Sources: *Flow of Funds Accounts of the United States and De Nederlandse Bank. Thanks to Francis Weyzig for help with data compilation.*

This is not to say that credit creation for the property and financial sectors must always be harmful on balance, as it was recently. Financial innovation - more financial assets and instruments - means more opportunities for risk diversification, consumption smoothing and investment. So these credit flows are not just luxury items in the economic system and vehicles of excessive consumption – they are vital to the economy’s financial machinery. This is what the financial sector was meant to do: support real-sector growth, profit and productivity. But it comes at the price of higher debt levels and therefore, more debt servicing costs and possibly, financial fragility.

We now know that growth in the private debt burden was a precursor and a cause of the global financial crisis (see also the Figure), and credit booms are generally a cause of financial crisis across time and countries (Reinhart and Rogoff, 2009). If only for this reason, it is important to understand that growth in credit to asset markets is behind the growth in the private debt burden. Any growth in credit over and above GDP growth is due to the lending flows emanating from banks to the mortgage and finance sectors. These create liabilities without direct real-sector asset counterparts (i.e. without a growth in GDP), leading to financial-wealth booms and, possibly, debt problems. Therefore, there can be ‘too much’ finance (Arcand et al 2011), undermining the financial sustainability of growth. The problem is that financial wealth cannot grow unless debt grows. This is an unyielding aggregate accounting identity. In the next section we consider this in detail.

3. Credit Flows and Financial Sustainability

We noted that bank lending to the nonfinancial sectors, for investment and consumption of goods and services, does not (or but little) increase the debt-to-GDP ratio. The reason is that if a loan is used for consumption or a self-amortizing investment in fixed capital formation,

this creates value-added in the form of products and services, and it (normally) leads to a flow of profit that typically allows the debt to be paid off. In that sense it is a broadly sustainable form of debt creation, if financial sustainability is defined in terms of debt burden.

Loans for investment in asset and property markets are different, and this accounts for their impact on debt-to-GDP ratios shown in Figure 2. The underlying reason is that such FIRE-sector investment by itself is a zero-sum game: for someone to make a capital gain, someone else must either give up income or go into debt (or both). If a loan is invested in the financial and property markets, this will push up the price of financial assets and create asset wealth for the owners. This capital gain is realized upon sale, and after repaying the loan, the investor may hold a profit. But at the other end of the sale transaction will be a new investor, who either took out a loan or drained liquidity from the real sector in order to finance the purchase. In aggregate, the total realized capital gain will be equal to the combined increase in indebtedness and in liquidity taken from the real sector in order to finance the increased asset price. The assets may be traded many times by, and each time the asset may increase in value – but in aggregate, the debt and/or drain from the real sector grows in parallel.

So financial markets can grow relative to GDP by absorbing more liquidity created in the real sector, or by increasing indebtedness. Either is unsustainable in the sense that it must, with axiomatic certainty, at some point end. Still, such (ultimately) unsustainable debt growth may be kept going over decades by expanding the stock of financial assets and instruments relative to the size of the economy.

This trend may be obscured by a ‘fallacy of composition’. What is clear on the macro level may not be obvious on the micro level. In an asset price boom any single individual can borrow, purchase assets, and sell them to pay off the debt with a profit left – except that this is not profit, but capital gain. But this distinction makes sense on the macro level only. On the individual level, there is no difference between capital gain and profit made from investment, production and sale. The financial costs and benefits, and the returns, may be exactly equal to the individual asset trader or entrepreneur.

There is so a micro-macro paradox. On the macro, society-wide level, there must be a growth in indebtedness for assets to be traded at rising prices. This is not true for profit from production, where the wages paid out to produce the good become the purchasing power that buys the good – or as Joan Robinson put it, ‘workers spend what they get, capitalists get what they spend’. This circular-flow process ‘pays for itself’ while both the

credit structure and the economy expand, so that all can gain – in contrast to asset trade, which is a zero sum game.

Therefore on the macro level, rising indebtedness resulting from asset trade takes the form of both rising commitments for the real sector to finance asset transaction out of wages and profit, and rising actual debt levels. Despite appearances on the micro level, asset price booms are accompanied by rising debt and, often, by a slowdown in real-sector nominal growth as liquidity is redirected from investment in fixed capital and innovation towards the financial markets. Stockhammer (2004) for instance, shows for major OECD economies that ‘financialization’ (which includes growing asset markets) caused a slowdown in the accumulation of fixed capital and of income growth.

The important distinction is that capital gains are not income – a distinction that maps onto Schumpeter’s distinction between the two types of credit that finance capital gains and income, respectively: credit to the FIRE sector versus credit to the real sector. In making this distinction, Schumpeter was of course building on the Classical economists. John Stuart Mill (1848, ch 4 book 1) noted the micro-macro paradox when he wrote that “[a]ll funds from which the possessor derives an income, .. are to him equivalent to capital. But to transfer hastily and inconsiderately to the general point of view, propositions which are true of the individual, has been a source of innumerable errors in political economy. In the present instance, that which is virtually capital to the individual, is or is not capital to the nation, according as the fund ... has or has not been dissipated by somebody else”. Funds not used (“dissipated”) in the real economy create income to their owner, but not to the economy. They are ‘capital to the individual, but not to the nation’.

4. When Credit Helps, and When it Hinders

This leaves the impact of credit on growth ambiguous: it may support investment and consumption, but it may also merely increase the debt burden, depending on the mix of credit flowing to the FIRE and real sectors. Can we be more specific? When does credit help, hinder and hurt economic growth? At what level of credit-to-GDP ratio is credit’s growth effect maximized?

Beginning with the last question, if we start from the simplifying assumption that only credit to the real sector leads to GDP growth (and we relax this below), the following applies. Following the notation in Werner (1997, 2005), total credit (C) can be split up in credit to the real sector (C_R) and credit to the financial sector (C_F) so that $C = C_R + C_F$. The

typical credit-growth empirical study (see e.g. Ang, 2009) is a regression of GDP growth on the credit-to-GDP ratio:

$$\frac{\Delta GDP}{GDP} = K + a \cdot \frac{C}{GDP} + b \cdot X + e$$

where K is a constant, $b \cdot X$ a vector of control variables and their coefficients and e an error term. The coefficient a is commonly interpreted to reflect the growth effect of credit, since it equals the first-order partial differential of growth with respect to the credit-to-GDP ratio:

$$a = \frac{d(\Delta GDP / GDP)}{d(C / GDP)} = \frac{d(\Delta GDP)}{d(C)}$$

The growth effect of an increase of the total credit stock $d(C)$ is a weighted average of the growth effects of its components, by definition. With weights w_1 and w_2 for its components C_R and C_F , respectively, that implies:

$$a = w_1 \cdot \frac{d(\Delta GDP)}{d(C_R)} + w_2 \cdot \frac{d(\Delta GDP)}{d(C_F)}$$

In the long term, movements in C_R (denoted $d(C_R)$) are very nearly equal to contemporaneous changes in GDP (ΔGDP) as Werner (1997), Godley and Zezza (2006) and Board (2013) all noted (and see Figure 1), while movements in C_F (denoted $d(C_F)$) are much less correlated to (or causing) ΔGDP . For instance, the most direct effect of wealth growth on GDP is the consumption effect of housing wealth; but even the largest estimates put this at only an 0.15% GDP increase for every percent growth in housing wealth (Papadimitriou et al, 2007). This implies

$$\frac{d(\Delta GDP)}{d(C_R)} = 1, \frac{d(\Delta GDP)}{d(C_F)} < 1$$

If the growth effect of credit can be decomposed into a small effect for CF and a one-on-one effect for CR, as the figures indeed suggest, then it follows that coefficient a is at its maximum for $\{w_2=0, C_F=0\}$. In that case, $C = C_R$ so that the credit-to-GDP ratio takes value one, or 100 % (recall that C_R is about 100% of GDP in the long term, Figure 2).

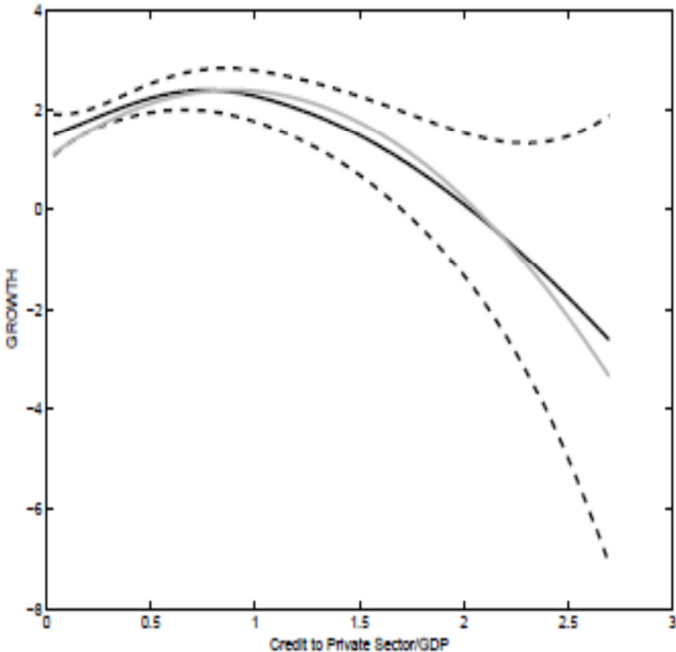
Some variation around this theoretical level is likely as we relax the assumptions. First, there are measurement issues surrounding the measuring of credit to the real and financial sectors, which will tend to overstate C_R in financialized economies (see section 4) so that the maximum growth effect will be attained for lower levels of C_R , and for $\frac{C}{GDP}$ values below 100%. On the other hand, if financial market supports real-sector development indirectly, this means that credit to the real sector will result in higher growth, pushing up the growth effect of C_R . In this case, the maximum growth effectiveness of credit will be for $C_F > 0$, at values for $\frac{C}{GDP}$ exceeding 100%. Pushing in the other direction are declining returns to credit so that $\frac{d(\Delta GDP)}{d(CR)}$ will start falling below its optimum already as $\frac{C}{GDP}$ approaches the 100% mark.

In sum, a theoretical expectation of the maximum growth effect of credit based on this paper's Schumpeterian distinction is around a credit-to-GDP ratio of 100%. This follows directly from Schumpeter's (and others') distinction, and it vindicates his focus on credit to the real sector as the primary force driving development and growth. In empirical studies, there will be some variation in real world observations due to measurement error and indirect effects of credit growth. The upshot is that for credit markets to function well, 'lending must support the real economy' (Bezemer 2009) so that credit and GDP grow in tandem, with a nonaccelerating share of FIRE sector to GDP and to total credit. This stands in stark contrast to the actual development reviewed above, where FIRE sector debt did accelerate since 1980s. With more such credit, other mechanisms than Schumpeter's growth and development effects start kicking in - such as increasing leverage and risk, higher debt burdens and more instability. We review some of these in the next section.

Meanwhile, how does this conclusion compare to what we know empirically about the 'optimal' level of debt? Easterly et al (2000) is an early attempt documenting that the volatility of growth tends to decrease and then increase with increasing financial depth. Mapping the credit-to-GDP ratio on a horizontal axis against the volatility of growth on the vertical axis, they find that the turning point - the bottom of the U - is around value 1 (or 100%) for the credit-to-GDP ratio. Borio and Lowe (2004) show in more detail how this happens: they identify that the combination of credit booms and asset price booms is a good predictor of financial instability. That is, specifically credit that inflates asset prices is a cause for rising debt-to-GDP burdens and asset prices simultaneously - with the premier example being housing markets (Figure 1). This supports a differentiated analysis of credit and growth.

Recently two other analyses have come out. In their paper ‘Too Much Finance?’, Arcand et al (2011) use different empirical approaches to show that there can indeed be too much finance – finance starts having a negative effect on output growth when credit to the private sector reaches 110 percent of GDP (see Figure 3 below). And in their paper on ‘The Real Effects of Debt’, Cecchetti et al (2011) also argue that ‘beyond a certain level, debt is a drag on growth’. They assess that for government and household debt, the threshold is around 85% of GDP while for corporate debt, it is around 90% of GDP. These empirical estimates of the optimal level of credit, all close to the 100 % credit-to GDP ratio, tally with the distinction between real-sector and financial-sector debt introduced in this paper, and the different effects that these have on growth.

Figure 3: The Growth Effect of Credit: average for 69 countries, 1970-2000



Source: Arcand et al, 2012:46. Note: the grey line is a quadratic fit, the black line is a generic fit, the dotted lines bound the confidence interval.

5. The Many Faces of ‘Too Much’ Credit

It was established that credit to the real sector stimulates growth; that credit crises and other credit-caused ‘drags on growth’ result from too much credit (well above 100 % of GDP); and that this must mean, specifically, too much credit to the financial and property sectors. So we know *that* ‘too much’ credit hurts the economy and we know *what type of* ‘too much’ credit hurts the economy. But *how* does this happen? In addition to the above logical, analytical and quantitative evidence, this section presents institutional evidence. In what ways does ‘too much’ credit harm growth? The most widely noted way is financial crisis (which is invariably an asset market crisis), but that is merely the end of excess. Much of the harm is done already during the boom of ‘too much’ credit. In looking for the answer in the actual world, in institutional detail, we know that the focus should be on credit to the FIRE sector. In this section, five contemporary ways are discussed in which too much credit to the FIRE sector hurts, taking the example of the U.S. economy since the 1980s. We study debt-financed M&A waves; dysfunctional stock markets increasing; inequality linking to increasing ‘financialization’ of the economy; housing-led growth; and the slowdown in investment.

The M&A waves since the 1980s

One example of the harm that excessive financial-sector credit stocks may do to the real economy can be found in the M&A waves since the 1980s. Kosnik and Shapiro (1997) report that from 1981 to 1989, reliance on investment banks to handle mergers and acquisitions increased from 75 percent of the merger deals to 100 percent. Despite the millions of dollars per deal this generated, they note that there was a strangely high failure rate of new acquisitions. From a real-sector point of view, this does not make sense; it is a puzzle, just like the ‘Great Moderation’ (see below), and academics love puzzles. Subsequent researchers have regressed a large array of firm characteristic and deal features on the success of the deals (in terms of share prices or firm profit), and this branch of research has blossomed into a genuine cottage industry. Throughout, the combination of the strong rise in the incidence of M&A deals with their high failure rate remains somewhat bemusing. But taking the deals for what they are – leveraged asset trades in pursuit of capital gains and fees – they were not failures; they were resounding successes. Firms were loaned up to the hilt and financial fees ran into the millions.

This is well documented. Bodnaruk et al (2009) analyse how firms are targeted by financial conglomerates in which affiliated investment banks advise the bidders. They show

that these investment bank advisors take positions in the targets before M&A announcements, with their positions then positively related to the likelihood there will be a bid, the premium of the target and, of course, the termination fees. However, Bodnaruk et al (2009) note “these deals are not wealth creating: there is a negative relation between the advisory stake and the viability of the deal”. This is how financial sector processes imposed on the real sector may undermine its proper functioning. Bodnaruk and coauthors first published this research as a working paper under the title "The dark role of investment banks in the market for corporate control". Eventually, it was published in the prestigious *Review of Financial Studies* under the more moderate heading of “Investment Banks as Insiders and the Market for Corporate Control”.

Giovanni (2005) recognizes that what drives these waves was not firm features and new market opportunities, but the availability of finance looking for returns – in other words, ‘too much’ credit. He writes that "in particular, the size of financial markets, as measured by the stock market capitalization to GDP ratio, has a strong positive association with domestic firms investing abroad." Hayward (2003) concludes diplomatically that "overall, these results suggest that professional firms (investment banks, DJB] lead clients to complex solutions with problematic outcomes." Such processes should not be researched or regulated as real-sector processes, but as financial speculation resulting from ‘too much’ credit. Only when making the distinction to start with, can we make sense of the unprecedented M&A waves we have witnessed.

Dysfunctional Share Markets

Yet another way in which too much finance hurts the economy was by rendering share markets dysfunctional. Stock markets are supposed to help firms mobilize money for investment by issuing equity, just as mortgage markets are supposed to help families invest in their residential capital by raising debt finance. In both cases, ‘too much’ finance may easily turn the helpful investment motive into a harmful speculative motive. Homes are then bought and sold not for living in, but for living off. Firms, instead of doing the hard work of realizing profit in the goods-and services economy, and seeing their share prices going up as a reward, now have an easier way to achieve a rise in share prices. By buying their own shares, on credit, they generate the additional demand for their equity that increases share prices. Instead of trading in goods and servicing, they start trading in (their own) financial ‘products’. Instead of issuing equity, they buy equity: they repurchase their own stock. This means that the equity market has become dysfunctional. Instead of

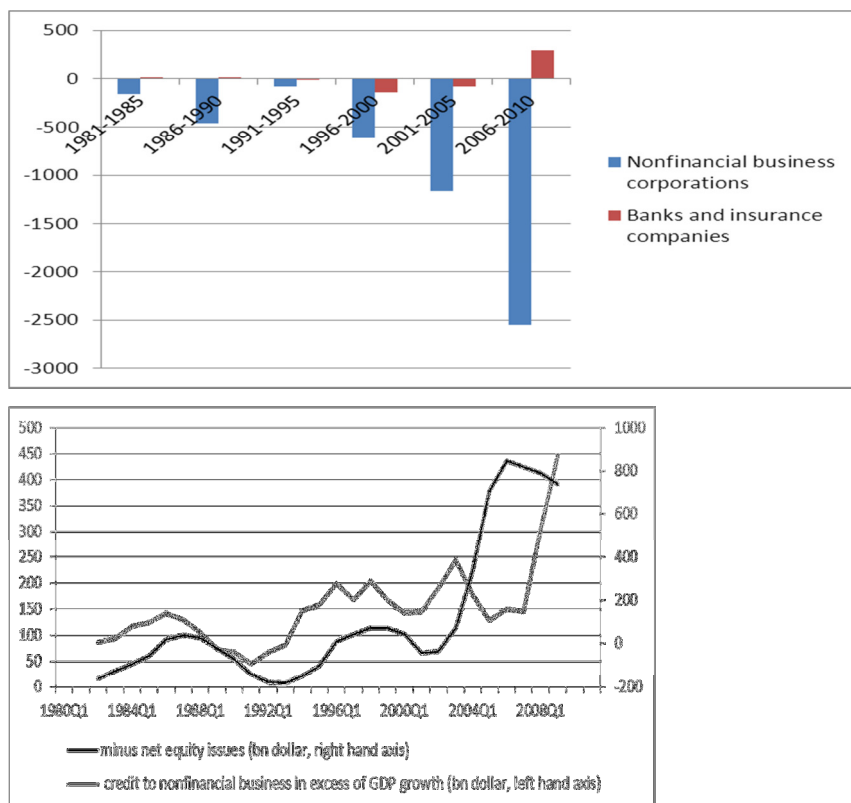
providing a flow of finance to firms, it absorbs a flow of finance from firms. In return, firms (and shareholders) see share prices go up, but at the cost of rising debt levels.

Over the last decades, this became the rule rather than the exception among large U.S. corporations. Lazonick (2011) presents data on 373 companies in the S&P 500 Index in January 2008 that were already publicly listed in 1990. He shows that they expended an annual average of \$106.3 billion (or \$285 million per company) on stock repurchases in 1995-1999, up from \$25.9 billion (or \$69 million per company). This was equal to 44% of their combined net income (up from 23% in 1990-1994). Combined, the 500 companies in the S&P 500 Index in January 2008 repurchased \$489 billion of their own stock in 2006, representing 62 percent of their net income, and \$595 billion in 2007, representing 89 percent of their net income (Lazonick, 2011).

Figure 4 compiles total net equity issues by U.S. corporations from Flow of Funds data, which are available from 1980. It is clear that net equity issues were increasingly negative especially since the mid-1990s: firms spent more on buying stock than they received from issuing stock. Equity markets were absorbing money from nonfinancial business rather than providing money to it.

This was financed by increasing debt levels. Figure .. shows negative equity issues in one graph with the increases in bank debt by nonfinancial business over and above the increase in output (GDP). This difference is a measure for credit taken up by nonfinancial business but not used to finance output growth by fixed capital formation or in working capital (if it was, that investment would have contributed to GDP). The strong correlation with negative equity issues shows what this debt was used for: financial investment, of which stock repurchases were an important category.

Figure 4: Stock Repurchases and FIRE-sector debt growth in the U.S., 1980-2012



Sources: BEA data; Flow of Funds Accounts of the United States, Table F213 (net equity issues) and series FL394104005.Q (credit data). Thanks to William Lazonick for drawing my attention to these data.

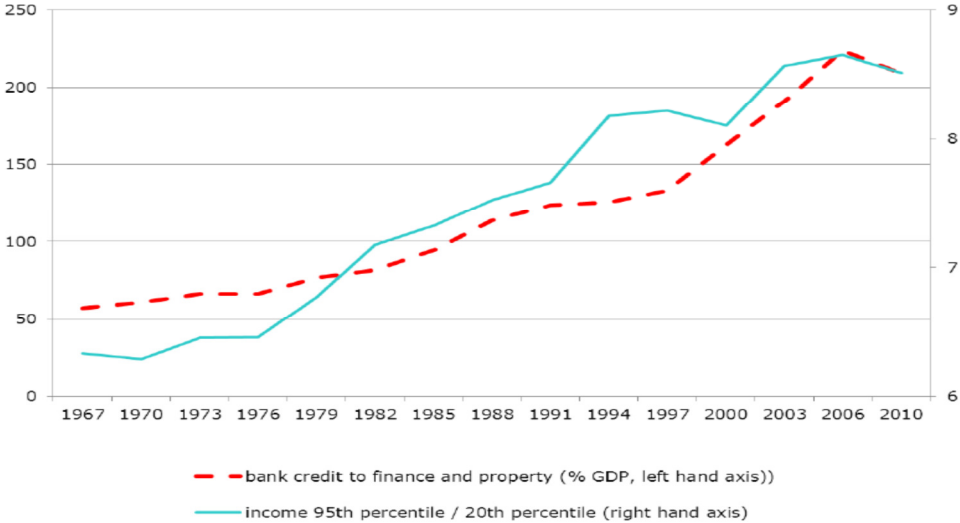
Growing inequalities

Another way in which too much finance hurts the economy is by increasing inequality. Again, the U.S. is an instructive example. Income inequality, as measured by the Gini coefficient, was mostly declining in postwar America until 1967, when it bottomed at a Gini of 0.35. In the four decades since then, inequality increased in most years to the present level of 0.44 (see table F-4 in the U.S. Census Bureau, 2011). Most of the increase in inequality was due to an increase in nonwage incomes – i.e. business income, capital income and capital gains. Each of these three components was importantly fuelled by the strongly increasing flow of liquidity that banks poured into the finance, insurance and real estate sectors. Ballooning financial and insurance markets and the housing bubble, as well as the plethora of derivative products developed in these markets provided ample investment opportunities to realize capital gains and capital incomes.

These revenues went overwhelmingly to the top incomes, more than to others. Piketty and Saez (2012) show that from the 1940s to the early 1980s, the top 0.1% incomes in the US earned about 1 % of all U.S. salary income and between 2% and 4% of all capital gains and capital income. But in the 2000s, the top 0.1% incomes earned about 3 % of all

U.S. salary income, and about 9% of all capital gains and capital income. Wage earning America could only partly share in the capital gains through the housing market, by going into debt. These were the mechanisms that coupled the rising importance of the FIRE sector to growing inequality in the U.S. – not only for the top 0.1 % but also using other measure of inequality. Figure 5 shows for the post 1967 years (when inequality was rising) the strong correlation between top 5/bottom 20 income inequality and the rise in FIRE-sector bank debt.

Figure 5: the share of bank credit to the FIRE sector and rising inequality, 1967-2012



Source: US Bureau of the Census, Annual Social and Economic Supplements to the Current Population Survey.

Housing-led growth

Housing-led growth in the US is an all too familiar story. During the 1980s - 2007 era now labeled the ‘Great Moderation’ (based on decidedly immoderate credit creation), US house prices tripled. Mortgage credit stocks lent by US banks to US households went from 15 % of GDP in the 1970s to 96% in the 2000s, as also Figure 1 shows. In the 1970s, one in ten Dollars lent out by US banks was towards a mortgage; but in the 2000s, this was one in three - such was the redirection in the transactions that the credit system supported.

Importantly, this was made possible by the proliferation of new forms of FIRE-sector credit and the growth in its volume. In a speech on 27 September 2005 to the National Association for Business Economics, then Federal Reserve Chairman Alan Greenspan spoke about the “... development of financial products, such as asset-backed securities, collateral loan obligations, and credit default swaps, that facilitate the dispersion of risk These increasingly complex financial instruments have contributed to the

development of a far more flexible, efficient, and hence resilient financial system than the one that existed just a quarter-century ago”. Similarly, the Canadian academic Philip Das in a 2006 survey article of financial globalization pointed out its benefits as “[f]inancial risks, particularly credit risks, are no longer borne by banks. They are increasingly moved off balance sheets. Assets are converted into tradable securities, which in turn eliminates credit risks. Derivative transactions like interest rate swaps also serve the same purpose” (Das, 2006).

Nowhere did these new financial products have a larger impact than on the housing market. Banks could extend unprecedented levels of mortgage debt by their new ability to sell on mortgages to other banks and investors worldwide, so freeing up balance sheets for further lending. What was special about this particular bubble was the large dependence of the real sector on its continued growth: the housing bubble both was an engine of growth and the cause of recession for the US economy. Papadimitriou et al (2007) review the evidence on the growth effect of rising house prices. They estimate that a 1% rise in house prices leads to a 0.12% increase in consumption (due to a ‘wealth effect’) and an additional 0.03% increase in expenditures (due to higher willingness to borrow). With these figures, the nominal tripling of U.S. house prices between the mid-1980s and the 2007 crisis implied that consumption was boosted by about 45 % over the period in nominal terms.

This is how an economy becomes dependent on FIRE-sector credit – both directly from mortgages and indirectly from other liquidity, supported by mortgage growth. The problem is that the growth in FIRE sector credit relative to GDP is also a growth in indebtedness (Figure 2), and therefore that it must at some point stop, as explored in section 4. Indeed, the fall in savings in the U.S. since the mid-1990s, and the growth in private debt, were identified as causes for a coming recession well before the housing market collapsed in 2006-7 (e.g. Godley and Wray 2000). FIRE-sector credit (mortgages and their derivatives) can support growth but not durably, and at the risk of debt and crisis, as was explored in section 3. This is the underlying reason that the excess of mortgage credit precipitated the bust. Kemme and Roy (2012) show in a thorough econometric analysis that the U.S. mortgage-driven house price boom was a good predictor of the crisis.

The Investment Slowdown

Even as a credit boom is still in full swing, it may hurt growth. Investments in the financial and property sectors may crowd out or discourage investments in fixed capital formation. Stock repurchases are a specific example of this, but there has been a wider trend.

Stockhammer (2004) notes how financial investments by non-financial business have been rising since the 1980s, and the accumulation of capital goods declining. In a time series analysis he establishes a causal relationship from more growth in financial investment to less growth in aggregate nonfinancial business investment for the USA, the UK and France. Similarly, Orhanghazi (2007) explored the growing ‘financialization’ process in the U.S. , denoting the growth of income from financial subsidiaries and investment and the transfer of earnings to financial markets in the forms of interest payments, dividend payments and stock buybacks. Using data from a sample of nonfinancial corporations over the previous three decades, Orhanghazi finds a negative relationship between real investment and ‘financialization’ so defined. Possible channels are a crowding out of real-sector investments by high-return financial investments, increased payments to the financial markets, and shorter planning horizons and increase uncertainty, both of which work against real-sector investment.

6. Summary, Reflections and Conclusion

In his theory of credit and development, Schumpeter distinguished between credit flows to the productive sectors and credit to property and capital markets. This distinction was shared by Marx, Keynes, Minsky and Tobin. In this paper I developed this distinction to understand how credit flowing to the real sector grows GDP in tandem, while credit flowing to property and asset markets raises asset prices and debt. A first contribution of the paper is to apply this distinction to U.S. data and show that the growth in private debt in recent decades is due to growth in credit flows to property and asset markets. A second contribution is to show how logically and analytically, the growth effect of credit should be at its maximum around a bank-credit-to-GDP ratio of 100%. This is also an empirical finding in several recent papers. Higher levels of financial development first spur growth but then increase fragility, with declining growth rates. A third contribution is to assemble institutional evidence. The paper discusses five ways in which ‘too much’ credit has hurt rather than helped the economy, each linked to property and asset markets, following Schumpeter’s distinction. It studies debt-financed M&A waves; dysfunctional stock markets; increasing inequality linking to ‘financialization’ of the economy; housing-led growth; and the slowdown in investment. This neglected analytical contribution of Schumpeter and others is more relevant than ever to our world today.

There are several limitations to this paper. Rather than focusing on one research question, it addresses three linked questions. What is an analytically useful distinction

between types of credit? When does credit help, hinder and hurt the economy? And in what ways does it, institutionally? This necessarily means that there is no scope for advanced analysis of any one question. It is hoped that the synergies of discussing these three questions in their connections make up for this. Also, I draw on more detailed empirical research by others to substantiate the main points of the paper, and prove them robust. But several other points – such as the relations between FIRE sector credit with stock repurchasing or with inequality – await more detailed empirical research.

Another limitation is that several of the arguments presented briefly and verbally, with data, here can be discussed more thoroughly using other methodologies. Especially the tracing of the effects of credit flows on debt, on instability, and on growth is better done in a formal, quantitative model that explicates financial flows, such as stock-flow consistent macroeconomic models (Godley and Lavoie, 2006). Third, whilst a focus on bank credit as representing financial sector development is justified in a Schumpeterian world where ‘banks are special’ (Fama, 1985), this paper has neglected other indicators of financial development such as stock and bond markets – except as channels for FIRE-sector credit flows. But of course, these alternative financing modes should be studied together with banks, as this is where the institutional dynamics of ‘too much’ credit is located. This would also allow a focus on the relation between bank liquidity and other liquidity including trade credit and shadow bank assets.

Finally, a policy implication is that different types of credit should be differently regulated, depending on policy preferences about their effects on the economy. In particular, if asset market bubbles are to be avoided, this requires explicit attention in monetary and prudential policy to FIRE-sector credit aggregates. Unfortunately, as Malcolm Knight, General Manager of the Bank for International Settlements, noted in a 2006 speech, “the prevailing mainstream theoretical paradigms, enshrined in current textbooks and research, find it difficult to accommodate a significant role for quantitative aggregates over and above that played by interest rates”. This brings us back to research, and to paradigm change. The research implication of this paper is, as the LSE noted, that we must “distinguish between different categories of credit, which perform different economic functions“. This paper suggests what the distinction should be, and provides some directions for research into the different potentialities of credit.

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