THE KALECKI-STEINDL THEORY OF FINANCIAL FRAGILITY

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Abstract

Kalecki and Steindl modelled the financial fragility of companies through a circular flow of income analysis, extending the treatment of inter-sectoral flows that Marx put forward in Volume II of *Capital* to include: household saving as a leakage from firms' revenues; and firms saving representing the financial accumulation of capitalist firms. Household saving causes financial fragility by reducing that financial accumulation. In Kalecki, this relation was put forward as an element in the 'trend' of economic development. Steindl made it of more immediate macroeconomic concern because it induces 'enforced' indebtedness among companies. The paper extends this analysis by showing how recent capital market inflation may have reduced this source of financial fragility, albeit at the expense of the indebtedness of households.

Introduction

This paper is a contribution to economic methodology, history of economic thought, and the analysis of current financial developments. It shows how economic concepts can be refined and developed beyond their original purpose for use in a better understanding of economic developments with which the original authors of those concepts could not have been familiar. It traces the origins of household saving as a factor in the macroeconomics of Kalecki through to its role in precipitating financial crises. Finally, the paper shows how in circumstances of asset inflation, the role of household saving changes.

The paper is structured as follows. Section 1 presents the role of household saving in Kalecki's business cycle theory. Section 2 shows how Steindl created a theory of financial fragility out of household saving. Section 3 shows how asset inflation reduces household saving and thereby shifts financial fragility from the firms sector to the household sector.

1. Household saving in Kalecki's analysis.

Kalecki's analysis is based on the reproduction (or as we would nowadays call them, circular flow of income) schemes put forward by Marx in Volume II of *Capital*. In his analysis, Marx argued that surplus value is turned into money by the expenditure of capitalists: '… it is the capitalist class itself that throws the money into circulation which serves for the realisation of … surplus value incorporated in … commodities.' (Marx 1974, p. 338). Whereas Marx emphasised capitalists' consumption as the way in which capitalists 'realise' their surplus value, Kalecki was able to show that the realisation of profit was chiefly done through capitalists' expenditure on investment, as well as their expenditure on their own consumption. (Marx's analysis, and its link with that of Kalecki is most clearly discussed in Trigg 2006, pp. 22-28). This can be easily shown as follows.

According to the standard national income identity, in any given period, total national income (Y) is equal to consumption (C) plus gross fixed capital expenditure, or investment (I), plus the fiscal deficit, plus the trade surplus.

Saving (S) is then equal to $Y - C$, which is then equal to investment, plus the fiscal deficit plus the trade surplus. Abstracting away from the fiscal surplus and the trade surplus, and in an economy in which there are only capitalists and workers, saving and consumption can be divided up into the saving and consumption respectively of capitalists and workers:

$$C = C_c + C_w \quad ; \text{and} \quad S = S_c + S_w$$

So that:

$$Y - C = S = S_c + S_w = I \qquad (1)$$

The surplus or profits of capitalists (P) is also, by definition, equal to their expenditure on their own consumption (C_c) plus their saving (S_c):

$$P = C_c + S_c$$

Since, by (1) above, capitalist saving is equal to their investment expenditure minus the saving of workers, it follows that $P = C_c + I - S_w$, which can be rearranged to give the familiar Kalecki profits equation:

$$P = I + C_c - S_w \qquad (2)$$

In other words, capitalists' profits are equal to their expenditure on fixed capital, plus their expenditure on consumption, minus workers' saving. Since this is derived from national income identities, the equation itself cannot yield any causal mechanism. This has to be obtained by a consideration of its economic significance:

'What is the proper meaning of this equation? Does it mean that profits in a certain period determine capitalists' consumption and investment, or the other way around? The answer to this question depends on which of these items is directly subject to the decisions of capitalists. Now, it is clear that they may decide to consume and invest more in a certain short period than in the preceding period, but they cannot decide to

earn more. It is therefore their investment and consumption decisions which determine profits, and not vice versa.' (Kalecki 1943, pp. 48-49)

In this analysis, workers' saving clearly has a negative effect on profits. It acts as a 'leakage' whereby money spent by capitalists on wages does not return to capitalists in the form of sales of wage goods. With capitalists' saving, the situation is more complex. Kalecki divides such saving up into 'entrepreneurs' saving' or the undistributed profits of companies, and the saving of 'rentiers', or those who own companies and financial assets. Because of their relatively high and stable incomes (except at times of hyperinflation), rentiers have a high propensity to save, and this saving stays relatively constant. Unlike entrepreneurs' saving, which is used to finance investment and is therefore matched by expenditure, rentiers' saving is a steady 'leakage' of income from the circular flow of money that capitalists put into circulation by their expenditure.

In this analysis, rentiers' and workers' saving is the result of what Marx described as 'a stagnation of circulation', whereas entrepreneurs' saving is '…merely the creation of money capital existing temporarily in latent form and intended to function as productive capital.' (Marx 1974, p. 353). With his analysis clearly focussed on an investment-driven business cycle, Kalecki incorporated the rentiers' saving as a factor in what he called the 'trend', i.e., the direction of economic growth disregarding 'the pure business cycle' (Kalecki 1943, chapter 5, Kalecki 1954, p. 159). He argued that such saving tends to give a negative trend. In his last discussion of rentiers' saving, Kalecki merely assumes it is small in relation to entrepreneurial saving, or retained profits, and that the two types of saving are proportionate to each other (Kalecki 1968). This would tend to make rentiers' saving fluctuate with the profits cycle.

Kalecki's classification of rentiers' saving as a trend factor makes such saving a weak foundation for any theory of financial fragility or crisis. A theory of financial fragility or crisis is by definition an explanation of economic breakdown caused or rooted in the financial system. While financial fragility may take time to build up, its adverse consequences should be apparent in the fluctuation of economic variables, rather than their averages or any trend. It was Josef Steindl, Kalecki's friend and associate, who turned his friend's theory of saving into a theory of financial fragility.

2. Steindl's theory of financial fragility.
Steindl's analysis is more advanced and perhaps more general than that of Kalecki because Steindl looked more broadly at the impact of middle class saving behaviour on the dynamics of the capitalist economy (Steindl 1952, pp. 113-121). The version that is presented here is the one Steindl later put forward (Steindl 1982; Steindl 1989).

Consider the Keynesian saving identity, in which saving (S) is the sum of firms' gross fixed capital formation (I), the fiscal deficit (G – T), and the foreign trade surplus (X – M). If we divide up total saving into Household Saving (S_H) and Firms' Saving (S_F), we get the following identity:

$$S \equiv S_H + S_F \equiv I + (G - T) + (X - M) \qquad (3)$$

These are all flow variables over a given period of time. Household saving is broadly related to income. Both Kalecki and Steindl confirmed Hobson's observation that the middle classes and those on higher incomes account for the vast bulk of household saving, for the obvious reason that they have higher incomes than people on lower incomes, and it is easier to save out of higher income.

In the theory of saving, household saving is the residual income of households that is not consumed. In the case of firms, their saving is the residual profit that they have, after their expenditure on the costs of producing their goods and services, and after payment of income commitments to holders of their financial liabilities (i.e., debtors, and holders of equity). In other words, firms' saving is the retained profits of all firms in the economy, or what Kalecki called 'entrepreneurs' saving'.

Firms' saving plays a crucial part in the dynamics of the capitalist economy. The vast bulk of capital accumulation by firms is financed out of retained profits. This was first noted by Kalecki, and was confirmed in studies by Locke Anderson, Victoria Chick and by recent research that I have done with Marilyn Polena (Anderson 1964, Chick 1993). Through its influence on capital expenditure, firm saving is a crucial factor in capitalist dynamics, i.e., inflation, employment and business fluctuations. This is apparent if equation (1) to re-arranged to give:

$$S_F \equiv I - S_H + (G - T) + (X - M) \qquad\qquad (4)$$

Once again, for the sake of simplicity, the sum of the fiscal deficit and the trade surplus is disregarded. This yields an identity in which Firms' retained profits (S_F) are equal to their gross capital expenditure minus household saving.

An implication of this is the Keynesian formulation that Investment determines Saving. The Steindl formulation given above retains Kalecki's insight that investment determines the retained profits of firms. However, household saving is a financial barrier to retained profits: Firms will only end up with retained profits amounting to the difference between firms' investment and household saving. If household saving exceeds the level of investment, then firms' saving becomes a net financial deficit. In this way, saving at all times equals investment. But the factor which equalises them in practice is not the rate of interest, as most text-books teach, but the net retained profits or financial deficit of the business sector.

This is illustrated in figure 1 below:

Figure 1: Household Saving & Firms' Retained Profits in Industrial Capitalism
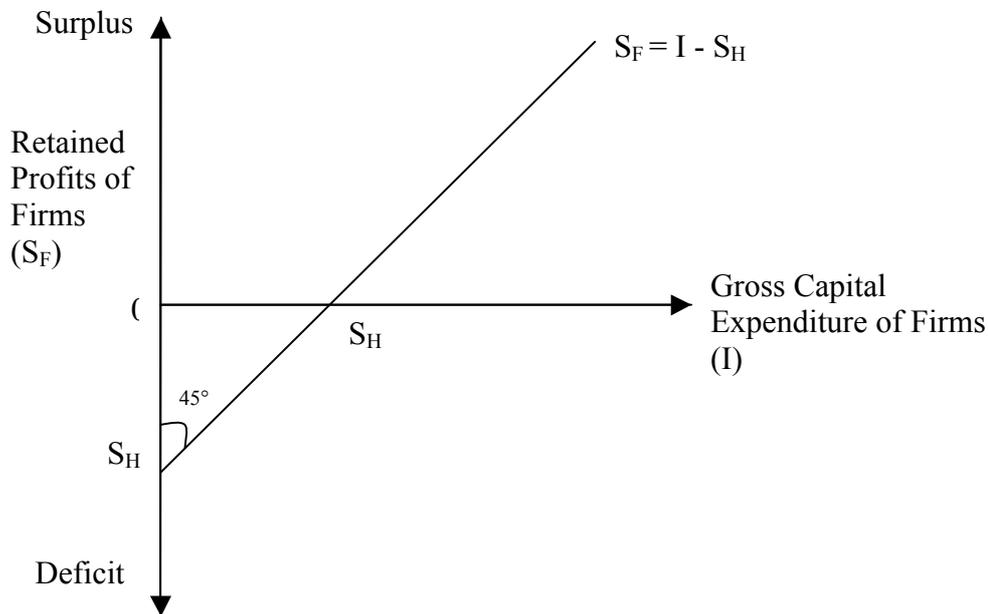
Saving = Firms' saving (S_F) +Household Saving (S_H) = Gross Capital Expenditure of Firms (I)

The figure shows the dependence of firms' net cash flow (retained profits – the curve S_F in the diagram) on investment and the level of household saving. On the vertical axis is shown the net financial surplus or deficit of the company sector. On the horizontal axis is shown the level of gross investment in the economy. S_H marks the threshold level of investment that investment must reach if the company sector as a whole is to avoid going into deficit. If investment exceeds that threshold, then firms receive a net cash inflow. If investment falls below the level of household saving, firms as a whole experience a financial deficit.

In Steindl, this relationship between household saving and the financial surpluses or deficits of firms plays a key part in the business cycle. If investment falls below the level of household saving, firms find themselves paying out more in costs, and payments to holders of their financial obligations, than they receive in income. Firms will then borrow to make up the deficit, and the rise in their indebtedness will tend to reduce investment further. Kalecki had argued that this is caused by the 'inelasticity of saving' with respect to investment (Kalecki 1943, p. 86). In other words, when investment falls, this does not immediately affect the incomes of recipients of higher incomes who account for the bulk of saving. Their continued saving prevents the money that firms throw into circulation, in the process of production, from returning to firms as sales revenue equal or greater than their costs of production and financing. In order to cope with this unexpected financial deficit firms continue to reduce their investment, driving the economy into recession, until household saving falls below the level of investment.

In his pioneering study *Maturity and Stagnation in American Capitalism* Josef Steindl gave a more detailed account of household saving, and showed that it was largely accounted for by rentier incomes, and the incomes of the middle classes (Steindl 1952, pp. 113-121). Rentier incomes are largely received through the intermediation of banks and financial institutions, which stabilise those incomes through diversification. The saving of rentiers is therefore largely unaffected by a rise in the financial deficit of firms. Some humbler, investors whose wealth does not allow them to diversify their portfolios, may find their incomes affected by the financial difficulties of firms. But such investors are marginal in economic and saving terms.

The remainder of household saving is accounted for by the saving of the middle classes, i.e., those employed in public administration, education, the liberal professions and, increasingly today, the managerial bureaucracy engaged in the administration of financial, industrial and commercial corporations. This social group is largely disconnected from the industrial business cycle, which does not affect those working in public administration, education and the liberal professions. Even the management of financial, industrial and commercial corporations may, if those corporations are large enough, insulate their incomes from industrial fluctuations by diversifying the business of those corporations.

This high and stable level of middle class saving forms a threshold that forces firms into unanticipated debt, when their gross capital expenditure approaches that threshold, and then falls below it. Firms respond to such 'enforced indebtedness' by postponing investment (it is much more difficult to reduce the costs of current production) and using the money saved to repay debts. This merely prolongs the industrial crisis, because it reduces investment even more below the household saving threshold. Investment is then further reduced. The crisis continues until public sector projects or replacement investment (depreciation) induces a rise in investment.

This prolonged industrial crisis is typical of the difficulties that affected industries in Britain and the United States in the 1950s and the 1960s. At the time, these difficulties were attributed to a lack of competitiveness against industrial producers in East Asia, the greed of trade unions and so on. But the true cause of these crises was the thrift of the middle classes, with memories of their difficulties in the Great Depression.

3. The theory of asset price inflation
The situation changed in the 1970s with developments that laid the basis for a new financial cycle. The proliferation of unregulated credit (most notably in the Euro-markets) and the ease with which credit can be expanded against rising collateral values, undermined financial regulation and created a new spirit of competition and innovation in banking and financial markets. Legislation greatly expanded the scope of funded pension schemes, in part at least on the grounds that this would direct more finance into industrial investment and thereby revive the industrial fortunes of the U.K. and the U.S. As we now know, the industrial revival did not happen, for reasons outlined in the next section. But the inflow of money into pension funds and its placement in financial securities set off a prolonged financial boom. At the same time, the removal of restrictions on housing credit inflated house prices.

(This section of the paper outlines the theory of capital market inflation that I put forward in my two books *The Economics of Financial Markets and the 1987 Crash*, and *The End of Finance* [Toporowski 1993, chapter 3, and Toporowski 2000, part 1]). With the expansion of the financial markets, and their influence on economic activity beyond merely financing trade and investment, a new phase of capitalist development has emerged in which companies and households have their economic activities increasingly determined by development in capital and asset markets. This section discusses the impact on economic dynamics of this new development. As a preliminary, it is useful to review the market processes that operate in capital markets. (The discussion here follows Toporowski 1993, chapter 3, and Toporowski 2000 part 1). Similar processes occur in the market for housing that has more relevance for more households than the processes in capital markets that affect also companies and financial intermediaries.

Capital markets, i.e., markets for financial assets, do not fix prices that make supply equal to demand, except in a notional sense. Financial markets typically operate for extended periods out of equilibrium. When the demand for financial securities exceeds the amount of money that holders and issuers of those securities are prepared to take out of the market, prices rise. As prices rise, demand for those assets, far from falling off, is enhanced by a speculative demand for assets to benefit from capital gains. However, prices of securities do not rise equally across all markets. Short-term securities and bonds usually have the price at which they are repaid written into the terms of the bond. As the date of their repayment approaches, their market price converges on their repayment price. The market price of such bonds will only exceed that repayment price by a small margin reflecting any differences between the interest payable on such a bond, and the interest payable on equivalent new issues. Excess demand for new securities will therefore inflate most of all equities (common stocks) that do not have any guaranteed repayment value.

Asset and capital market inflation allow debts to be written off against capital gains. The mechanism for such write-offs works only as long as the credit system is fuelling more credit into the market to facilitate the asset sales used to repay debts. When that stops, the liquidity of the market collapses and debt deflation sets in. The dependence of capital gains on net credit inflows into a given asset market turns the whole market into a Ponzi scheme. Financial fragility in such markets arises because, while the market may need net credit inflows to sustain a given rate of capital gain, there is no mechanism to ensure that sufficient credit will automatically flow into the market to more than off-set the credit being taken out of the market to write of debts and finance other activities. If capital gains cannot be realised, then the whole mechanism for writing off debts against capital gains breaks down.

The majority of securities are issued by financial intermediaries and bought by other financial intermediaries ('in an era of finance, finance mostly finances finance'). This issue therefore does not constitute any net expansion of credit, or of the balance sheets of non-financial businesses, such as would take out of the markets any excess net inflow of money into those markets. The non-financial sectors that do take money out of the markets are governments, and corporations. The finance that governments take out of the markets is limited by their fiscal position (the balance between government income and expenditure). An excess demand for securities, such as was set off by the inauguration of funded pension schemes in the U.K. and the U.S. therefore impacts

most directly on the balance sheet operations of corporations. During the 1980s, corporations that issued securities in the capital markets found that they could issue shares cheaply. In particular, with capital market inflation, shares came to be held not just for the sake of their dividend income, which is paid by the company, but also for capital gains, which are not paid by the company but by other buyers in the market for the shares.

As a result of the excess demand for shares, corporations have issued capital in excess of what they need to finance their commercial and industrial operations. In the past the over-capitalisation of companies might have been avoided because it would have involved the 'watering down' of profits (sharing a given amount of profits among more shareholders), or loss of control by the directors of a company who could no longer control the majority of shares at a company general meeting. However, today's shareholders are mostly institutions whose large diversified portfolios are sub-contracted to professional fund managers and rated on financial returns, rather than on their active running of companies. By and large they have too many diverse holding to take any other than a financial interest in a company. At the same time, new techniques of senior management remuneration have tended to replace profit-related pay with share price-related pay, through stock options. Along with new techniques of debt management, stock option remuneration has removed inhibitions about the over-capitalisation of companies.

Excess capital has been used to replace bank borrowing with cheaper long-term capital. Replacing borrowing with shares also has the advantage that pre-tax profits can be made to rise by the reduction in interest cost. Where excess capital has not been used to reduce debt, it has been used to buy short-term financial assets. Alternatively, excess capital is committed to buying and selling companies. Hence the extended festival of merger and takeover activity and balance sheet restructuring that has characterised corporate finance since the 1980s.

One may wonder what happened to the hopes of industrial revival, entertained at the end of the 1970s, when it was argued that funded pension schemes would make more long-term capital available for industrial investment. These hopes have by and large not materialised. Britain and the U.S., where capital market inflation has been most heavily promoted, remain economies with weak industrial investment and performance, for which the cause is fairly obvious to anyone who has followed recent changes in corporate finance. Large corporations, which account for the vast bulk of private sector investment, now have excess capital and engage more in balance sheet restructuring (buying and selling financial assets; issuing and repaying liabilities). Such restructuring leaves corporations with larger risky financial market exposures, which therefore require the holding of greater amounts of liquid assets (short-term deposits, holding of financial paper). If a company finds itself with too much liquid assets, profits can be immediately increased by using the excess liquid assets to repay debt. Indeed, this is a far more certain way of raising profits than the prolonged and uncertain business of investment in plant and equipment. Industrial regeneration is a dream of engineers, from which companies are awoken by their finance directors to face the irrefutable realities of balance sheet restructuring as the only financially viable way forward for all companies.

The overall effect of company over-capitalisation on banks has been to make them more fragile. Before the 1970s, the largest, most reliable borrowers from banks were large corporations. From the end of the 1970s, such corporations found that they could borrow much more cheaply by issuing their own bills (company paper) or directly from the inter-bank market. If banks wanted to hold company loans, they have to buy them in the market at yields that gave banks no profit over their cost of funds in the capital or money markets. The loss of their best customers has turned banks towards fee-related business in derivatives and debt obligations markets, and towards lending into the property market and to other risky customers that banks had hitherto treated with much more caution. The overall effect, from the savings and loans scandals of the early 1980s, to the sub-prime market crisis since 2007, has clearly been to make banking markets much more fragile.

The rise in the value of their real estate and financial assets has induced a change in saving behaviour of the middle classes. Hitherto the middle classes saved more or less passively, along lines loosely related to the Life Cycle Saving Hypothesis, or the New Classical consumption function: Income was put into savings to support future consumption in retirement. Only among the small minority of the wealthy upper classes was wealth used as a substitute for income, with legacies and realised wealth being used to support current expenditure. From the 1980s onwards, active use of their balance sheets to generate cash flow became much more common among the middle classes. Asset inflation allowed the emergence of an alternative 'welfare state of the middle classes' based on issuing financial liabilities against rising asset values, or the sale of inflated assets. Private health care, fees for education, replacement income in periods of unemployment, have increasingly, among the middle classes, been accommodated by borrowing against wealth whose value has conveniently been rising much faster than current expenditure, or selling such wealth.

When assets are no longer largely held long-term, to be realised only on death or retirement, but come to be held more briefly, for capital gain purposes, their turnover inevitably increases. The more common use of debt or asset sales to pay for current expenditure has brought down saving rates in the household sectors of the United States and Great Britain to negligible or negative levels. This in turn has removed the household saving threshold which firms' investment must exceed in order to provide the business sector as a whole with a financial surplus. Now the total amount of firms' capital expenditure is realised as net cash flow in the form of retained profits. This is illustrated in figure 2 below.

Figure 2: Household Saving & Firms' Retained Profits in Financialised Capitalism
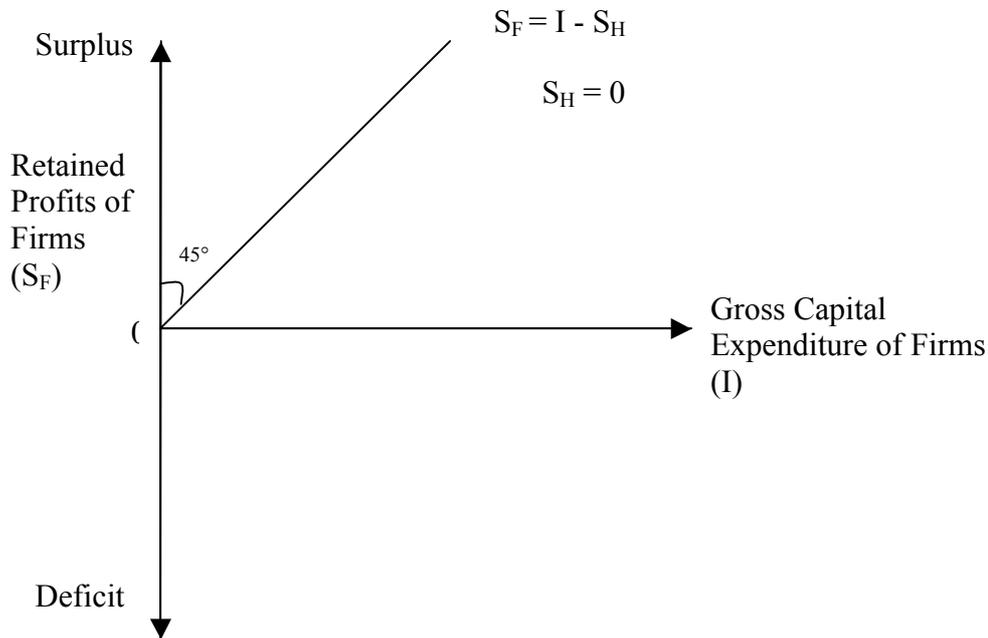
The business cycle is now different. Industrial crises no longer play a part in bringing economic booms to an end. Such crises are largely eliminated by the over-capitalisation of corporations, which makes it easier for corporations to maintain their liquidity. Industrial crises have now been replaced by a less dramatic under-investment in fixed capital by those companies. Booms are increasingly driven by middle class consumption, sustained by capital gains extracted from inflating asset markets. The end of a boom is marked by a financial rather than industrial crisis. But the resilience of consumption, which in wealthy countries remains one of the most stable elements of total expenditure, ensures that economic recessions are weak.

4. Conclusion

This paper has argued that asset and capital market inflation has brought about a relative economic stability by removing the 'congestion' to the circular flow of income induced by household saving. It has not considered the consequences of the decline of industry in the financialised economies, with manufacturing being the main industrial casualty of financial inflation. Nor has this paper considered the extent to which financial inflation in the U.S. and the U.K., by backing their currencies with inflated asset values, has accommodated the macroeconomic imbalances that have resulted from a weakening industrial performance in those countries. Essential to the theory of financial fragility is the idea that macroeconomic imbalances do not work themselves out in some reified way, abstracted from, or a mere conjuncture of prices in, the economic calculations of 'economic agents'. In a credit-based capitalist economy, such imbalances are resolved through the constraints that debts impose upon firms and households. The ultimate financial fragility arrives when financial inflation can no longer be used to write off debt.

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