The Determination of Profits

Romar Correa
Department of Economics
University of Mumbai
Mumbai 400 098
India

e mail: romacorrea10@gmail.com

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Abstract

We join the recent chorus of interest concerning the determination of money profits. The Godley and Lavoie, 2007, framework is used. Two regimes are distinguished. Under ‘private banking’, ‘bank profits’ and ‘entrepreneurial profits’ sum to zero. Only government can support aggregate profits. Specifically, we show that the institution of the long-term bond is sufficient to deliver the result.
1. Introduction

The problem of accounting for the emergence of profits in a capitalist economy is suddenly being attacked by scholars (see, for instance, Binswanger 2009). Some impetus is provided by the recent financial crisis. The era of the so-called “great moderation” when profits in financial activity, at least, increased astronomically, supported by monetary policy came to an abrupt end. The pioneering interventions of the Federal Reserve to support long-term productive activity must have the flowering of prospective positive profits as the underlying objective. The founding fathers wrestled with the concept analytically. In the case of an economy which is a circular flow that rejuvenates itself, the value of factor inputs must equal the value of output at nominal prices. Consequently, entrepreneurial profits as well as interest accruing must be nil. Besides, if owners of the factors of production command total revenues, no monetary resources should be left over for new investment. In turn, Marx, Keynes, and Schumpeter, for instance, allegedly threw up their hands in despair. Marx, for example, did not offer a rigorous account of how $M$, through the circulation of commodities, could transform to $M'$. The material for an accounting resolution was available in Keynes' *Treatise*. That work is rich in monetary and financial detail supported by the development of accounting relations. However, in the movement towards the *General Theory*, attention was deflected towards the determination of output as a whole. Schumpeter’s model consists of an evenly-rotating engine moving goods and services that suddenly transforms itself into a nonlinear system with risk-loving banks and profit-seeking entrepreneurs. The details of the transformation were never worked out.
The modern contribution is to not treat the real and monetary aspects of the issue separately. Thus, interest in Marx’s manuscripts on banking published posthumously is not less than that in the volumes of *Capital*. For instance, little attention is paid to the ‘transformation problem’ of theorising the trip from values into prices, the sine qua non of Marxian economics of yesteryear. The limits of algebra were stretched in providing examples and counter examples of ‘negative surplus value’ and ‘positive profits’. An emerging synthetic approach confronts the modern economy as a set of interrelated monetary and financial and real circuits. Support of the founding fathers has been secured towards that end (Tomasson and Bezemer 2010). Jeremy Bentham was a progenitor of the notion, subsequently associated with Keynes and the Post Keynesians, that banks could create credit out of “thin air”. He distinguished between productive and unproductive credit. The former supported productive enterprise and melded with the circular flow. The latter, on the other hand, did not finance current production nor fresh investment and, therefore, did not cycle back to factor owners. For example, in consumption credit and mortgage loans lay the foundations of money profits and interest. Also, the contribution of Jean-Baptiste Say might not be the Law for which he is famous. Inherent in supply is the ‘wherewithal’ for its own-consumption. ‘Wherewithal’ is understood to mean monetary means or purchasing power. Money is the intermediary in the logical relationship. No sooner has a product been produced that it affords a market for other products to the full extent of its value. The actual sale calls forth the funds that back the demand for the goods. Finally, in the appraisal of one scholar, macroeconomics did not begin with Keynes (Colander 2010). The classical-mercantilist divide of the 1600s was imaginary. Scholars like Thornton, Cantillon and Law, for instance, were alive
to the connection between finance and macroeconomic activity, being intimately involved with the banking business themselves. Coming to the present, in the circuit approach in monetary macroeconomics, bank money is emitted with the wage bargain. Correspondingly, businesses draw down their overdraft facilities with the financial institutions and production gets underway. The expenditure of workers is the income of firms and the circuit ends when firms square their debts with the banks. Clearly, there is no room for a positive interest rate nor bank profits when accounts are closed. The circuitistes have been critiqued for not accounting for the following inequalities: the initial loan, a stock, might generate flows that exceed the value of the stock. For instance, the wage bill could exceed the value of the initial finance (Keen 2010).

2. The Godley & Lavoie (2007) model

For the reasons cited, we prefer the so-called consistent stock-flow modeling strategy associated with Godley and Lavoie (hereafter G&L), 2007. The canvas is national income accounts and the discipline is that of double-entry bookkeeping. Surplus and deficit items must be of opposite sign and identical magnitude. Thus, in a typical G&L matrix, the bottom row and the extreme right-hand column are vectors of zeroes. Our dilemma is underscored. How do we make room for positive profits in a model with no growth? A hint is provided by Bruun and Heyn-Johnsen, 2009, who protest that G&L do not investigate the dynamics of changes in the prices of equity. The latter reflect the best guess of future cash flows and are not bound by the laws of conservation. Equity held is valued at current prices whereas equity issued is fixed at the issue price. Hence, the calculations of profits depends on financial markets. The net worth of an economy
depends on the revaluations of the capital stock. We work with this insight. Only, private equity washes away when added up for the economy as a whole. Government bonds take the place of equity. Overall, G&L have left the agenda of working through the steady state properties of their models open (Taylor 2010).

Our first equation is given by the definition of “entrepreneurial profits”, $F$, by G&L (p.255). We resort to explicit time subscripts when necessary and substitute the value of consumption, $C$, for the value of sales, $S$. Thus,

$$ F = C - WB + IN_t - IN_{t-1} - r_{t-1}IN_{t-1} $$  \hspace{1cm} (1)

During the period, firms have to meet a wage bill, $WB$. The change in the value of inventories $\Delta IN$ are financed through bank loans, $\Delta L$. In addition, as a legacy of the past, they must pay interest on their outstanding stock of loans/inventories.

2.1 Private banking

The equations below are intended to mimic the banks of yesteryear which ‘originated and held’ loans made for productive purpose. At the other end, they received the savings flows of small and local borrowers. The following is taken from Chapter 7 of G&L. Instantaneous quantity adjustments are assumed. That is to say,

\[

c_s = c_d \\
N_s = N_d \\
\Delta L_s = \Delta L_d 
\]  \hspace{1cm} (2)
In words, producers supply the goods demanded. Involuntary unemployment prevails. Workers will offer themselves for employment at the prevailing wage rate. Finally, banks satisfy all their loan applicants. With no government and, therefore, no taxes, the disposable income of households is the sum of wages and interest income from their bank accounts.

\[ YD = WB + r_{\Delta t} M_{t-1} \]  \hspace{1cm} (3)

The household budget constraint follows. In our one-asset world, income not spent on consumption goods must be deposited in banks. Thus,

\[ \Delta M = YD - C \]  \hspace{1cm} (4)

Combining (3) and (4) we get

\[ M_t = (1 + r_{\Delta t})M_{t-1} + WB - C \]  \hspace{1cm} (5)

Rewriting equation (1) and recalling the bank financing of inventory accumulation,

\[ L_t = (1 + r_{\Delta t})L_{t-1} + WB - C + F \]  \hspace{1cm} (1)

We take the stationary solution of the above two equations and introduce the definition of bank profits \( F_b = r_{\Delta t} L_{t-1} - r_{\Delta t} M_{t-1} \). Then subtracting (5) from (1) gives
G&L discipline is enforced. Profits must be extinguished in equilibrium. We underline that the profits of banks earned from financing plant and machinery and so on and supporting the precautionary motives of households have a counterpart in profits in manufacturing activity. If profits in the ordinary business of banking dwindle so too does the profit of industry. Both are, consequently, propelled off balance sheet. Banks will approach wholesale funding sources and support esoteric financial instruments increasingly unrelated to real activity. In the mirror, entrepreneurial activity will be driven towards financial innovation and churning. Thereby runs the tale of the US of A (Kregel 2010). By separating commercial banks and investment banks, the Glass-Steagall Act guaranteed the profits of the former. Competition from non-banks forces banks to lower \( r_h \). At the same time reliefs in providing low-cost transaction balances on account of productivity increases has not taken place. That is to say, there has not been a downward pressure on \( r_h \). Financial entities could challenge bank spreads through asset securitization.

2.2 Government money

The money of Bentham and Say need not be private money. It could as well be paper issued by the state. The defining function of a central bank in a monetary laissez-faire economy is its establishment of a unit of account. Outside the textbook, relative price discovery takes place through the encountering nominal prices denominated in fiat
money. Inter temporal trades are possible if and only if people trust in the agency backing the paper (Aglietta and Mojon 2010).

We introduce long-term government bonds or consols $BL$ (G&L, chapter 5). Each perpetuity is a piece of paper that pays one unit of currency per unit of time. The total flow of interest payments on these assets in the current period is $BL_{t-1}$. The value of the bond in the current period is quantity times price or $p_{bt}BL_t$. Households are characterised by an accumulation of wealth, $V$, equation, which goes as follows (G&L, p.140).

$$V_t - V_{t-1} = (YD - C) + \Delta p_{bt}BL_{t-1} \tag{7}$$

In what has been called the Haig-Simons definition of income, capital gains, the last term in the above equation, is included. For later reference, we will refer to the expression as the surplus of wage-earners and rentiers.

The government budget constraint is

$$B_t - B_{t-1} = (G + r_{t-1}B_{t-1} + BL_{t-1}) - (T + r_{t-1}B_{t-1}) - p_{bt}\Delta BL \tag{8}$$

The government deficit is financed by freshly-issued bills, $B$. The first term in parentheses is the total outlays of the government which consists of expenditures and interest payments on the outstanding debt. The second term is government revenues which comprises of its income tax receipts and central bank profits. We know that the government deficit is the private sector surplus. Then subtracting equation (7) from equation (8) should give aggregate profits. Recall that the central bank is the residual
purchaser of government bills after household demands, $B_{hh}$, and bank portfolios, $B_{bd}$, are satisfied. That is, $B_i = B_{th} + B_{hh} + B_{bd}$. Thus,

$$\Delta B - \Delta V = (C + G) - (YD + T - r_{t-1}B_{hh}) + r_{t-1}B_{bd} + BL_{t-1} - p_{bd}BL_t + p_{bd,t-1}BL_{t-1}$$

Now, $Y = C + G = YD + T - r_{t-1}B_{hh}$ (G&L, p.103). The return on government bonds are a part of disposable income now. Also denoting profits, the left-hand side of the above equation, by the more familiar $\pi$,

$$p_{bd,t}BL_t = (1 + p_{bd,t-1})BL_{t-1} - \pi + r_{t-1}B_{bd}$$

(9)

The stationary solution is given by

$$\pi = BL_{t-1} + r_{t-1}B_{bd}$$

(10)

The superstructure for profits is the banking system, both private banks that hold government securities as well as the central bank that issues long-term bonds. As an illustration, the stability of post-war output of the US economy was on account of a large government deficit. Households and firms could access a risk-free asset, the government treasury bill, that was leveraged to deliver steady growth.

The strategy of going long has been invented by the Federal Reserve post crisis (Gagnon, Raskin, Remache and Sack 2010, Nelson, 2011). In the face of the zero-bound interest rate problem, the Fed purchased huge quantities of assets with medium and long-
term maturities. These large-scale asset purchases (LSAPs) have ignited interest in the Fed balance sheet. They reduce the supply of riskier long-term assets. The risk premiums fall as do yields. The LSAPs caused a reduction in long-term interest rates not just on securities that had been purchased but on others as well. These drops in interest rates reflect a fall in risk premiums, not expectations of lower future short-term rates. With lower yields on government securities, investors will bid up the prices of corporate bonds and equities and, thereby, stimulate investment. Private borrowers should find their long-term borrowing costs lower. The value of long-term assets held by households and firms should be higher. Most of lending on the long side is done by institutions like pension funds and insurance companies who are more-or-less committed to purchasing long-term fixed income securities. The scope for central bank purchases to affect long-term interest rates for a given path of short-term rates is not slight. With a near-zero short-term rate, the relative immobility of short-term funds makes direct purchases in the long-term bond market necessary to effect a portfolio balance shift. The instrument might resuscitate moribund banks. At a null short rate bound, central bank purchases of short-term riskless paper leaves commercial banks with an unchanged total of noninterest-bearing assets, base money and short-term Treasuries. A central bank purchase of long-term debt, on the other hand, raises this total. If the bond purchase is from a commercial bank, its earning assets are reduced. Along with its enhanced liquidity, it is likely to respond by restoring and hiking its total earning assets. The aggregate level of deposits of the banking system will rise. If the bond purchase is from a nonbank seller, financed by the creation of reserves, the earning assets of the commercial banks do not fall but their non interest-bearing assets rise. Once again, there is a liquidity effect leading to an inducement to lend
The long-term government bond, in addition, might back Keynes’ recommendation to separate the budget into a current (government consumption) and capital (government investment) budget (Pérez and Vernengo 2010). The capital budget is a summary of capital expenditures required for equality with savings. The current budget could be in surplus which was to be transferred to the capital budget.

3. Conclusion

Aggregate profits, it turns out, are part of the solution of a difference equation in central bank funding of economic activity. It can grow or shrink, cause or be effected by capital gains on long-term government bonds. The context of the exercise is a set of ideas thrown up during the recent financial-real crises emanating in the US of A. The dilemma is to distinguish profits generated in the financial circulation from profits earned on the production of goods and services. The consensus is that there is need to recapture the distinction between banks supporting production and inventory accumulation and long-term investments backed by financial institutions through money market funds. The latter are uninsured and some scholars, endorsing the intervention of the Federal Reserve to back real investments, have opined that the long-term government bond might be the monetary instrument of the future.
References


