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The Paradox of Monetary Profits: An Obstacle to Understanding Financial and Economic Crisis?

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Abstract

The paradox of monetary profits has been a recurrent theme in macroeconomics since the problem was first formulated by Marx. Capitalists as a whole can at most get from workers, what they already paid out in wages. Marx did not solve this problem, and neither did Keynes, who had to face the problem in "The General Theory". A consequential logical conclusion to Keynes' treatment of the problem, leaves his concept of aggregate income indeterminate—based on imaginary magnitudes. Both Marx and Keynes tried to solve the problem by addressing current transaction flows, which is also the approach taken by more recent contributors. Another solution to the problem is to regard monetary profits as a flow arising from changes in stock magnitudes—more specifically the monetary valuation of real capital performed at financial markets. Besides solving the paradox of monetary profits, this solution also provides us with a very strong connection between the real and the financial spheres. The monetary profit inducing capitalist production, emanates from the sphere of finance. In a world of fundamental uncertainty this gives us an explanation of, not only what may drive financial booms and busts, but also how these movements on financial markets are related to the real sphere of production.

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1 Macroeconomics, finance and production

Empirically, financial instability is an eventuality in macroeconomic dynamics. The debts and liabilities created and traded in financial markets are based on equity and collateralised property of real estate and produced goods. On this basis, and in principle, an unlimited multiplicity of derivatives can emerge, expanding the trading stock of assets and liabilities in the financial markets. A financial crisis consists of a significant rate of deflation of the money-valued financial assets together with defaults in servicing liabilities. If the crisis could be isolated to the derivative province of the financial markets, it would only characterise and have an "casino" impact on the magnitude and distribution of monetary wealth.

The macroeconomic significance of financial instability is rooted in the connectivity of macroeconomic production and income-creation, on one side, and the necessity of monetary financing thereof, on the other side. The side of financial markets. This connectivity is a sine qua non of capitalism as a mode of production or as a monetary production economy, and has been presented as such in political economy by Marx, as the predecessor, followed by Schumpeter and Keynes. A *sine qua non* that lives on in the core of Post-Keynesianism and in the theories of the monetary circuit and emissions.

The theoretical question is, what sort of connectivity? How do the two sides interact? To investigate possible macroeconomic effects and causalities between the two economic spheres of capitalism we have to locate the joints. The joints of the two spheres in the sequences of capitalistic reproduction, simple or enlarged, can be illustrated as:

M-C-M

with M-C as the monetary financing of real production of commodities, primo, and C-M as the monetary realisation of the real product, ultimo. At the financing joint, monetary liabilities are buying production commodities and labour(power), whereas at the realisation joint, monetary income is buying commodities for consumption and investment. These are concepts for macroaccounting of monetary production, together with the class distributional incomes of wages and profit.

2 Marx

In Marx's original presentation of the sequences, focus is on the circuit of capital, it is called a *salto mortale*, with M-C as the transformation[1] of money-capital into production-capital consisting of production goods and labourpower. In the production process production-capital is transformed into commodity-capital to be transformed into money-capital at the C-M joint. Having money-capital as money proper, i.e. gold, the *salto mortale* is referring to the necessity of the C-M retransformation and the latent possibility of not being able to transform the whole value of commodity-capital into money-capital. If the money-capital M is not regained *in toto* there is a loss of capital for the individual capitalist. But as money-capital consists of money proper, this only means a shift in the distribution of the given stock

[1] Marx is using the less mechanical term metamorphosis.

of money. The repercussions of which are eventually to be observed in subsequent capital circuits. But with the money stock given there will be no further financial consequences in this simple sequential analysis.

The problem, logical and, therefore, perennial, in Marx's analysis is the realisation problem imbedded in C-M. The transformation M-C designates an exchange of M-units of money against production commodities and labourpower, c and v, all measured in value terms of embodied direct and indirect labour. The value of the production commodities as c, and the value of the wages, the payment of labourpower, as v, and the M-units of money as c+v.

In this classical value-view of Marx, the process of production calls forth a surplus value, s, as the difference between value of the wages and the direct labour embodied in the product. If the worker is able only to reproduce the value of his own wages, there will be no surplus and no capitalism, this, also, is a *sine qua non*. Taking the two inevitabilities, the value surplus in production and the necessary connectivity of the financial, here proper monetary, and production spheres, leads to the modifying specification as:

M-C-C'-M'

the produced surplus value in commodity form, the profit as the difference between the value of C' and C, has to be realised in money to reach the final stage of the sequences. M' has to be greater than M. This constitutes the perennial problem in the specifications of political economy of Marx-Schumpeter-Keynes.[2]

2.1 The realisation problem and its non-solution by Marx

Below we will trace the problem in the work of Keynes, here the logical proto-problem of Marx' proposed solutions is stated.

For capitalism to produce, and thereby reproduce itself as a mode of production, the surplus value has to be realised in money. That is, the monetary demand for the commodity-capital, the product, has to be greater that the monetary demand for production commodities and labourpower. How is it possible for the capitalists, *in toto*, to extract more money at the end of the circuit than the money they injected at the opening? One immediate, but not plausible, possibility is Marx' proposal, that the value of the gold production in the sequences exactly equals the surplus value inherent in all the other commodities produced. Adding the newly produced gold value to the total monetary demand would be an arithmetic solution of the realisation problem. The total product includes the money profit as a gold-commodity. And this could only happen by chance, as long as the value of gold, as money, has to be in accordance with the labour theory of value. That is no inflation.

Marx delivers an alternative solution to the logical problem. Probably inspired by the zig-zag tableau of Quesnay, in which a pre-existing monetary fund in the possession of the productive class, the farmers, is shown to circulate, distribute and allocate, not only the net product of the economy, the ground rent, but the whole national product in successive monetary exchanges.

[2] "Political economy" signifying economics embedded in a specified sociological and/or institutional setting.

> "Die Gesamtklasse der Kapitalisten kann nichts aus der Zirkulation herausziehn, was nicht vorher hineingeworfen war." ("The class of capitalists can not extract from the circulation, what has not previously been thrown in.")
>
> (Marx, 1969, vol.2, 2.sec., chapt. 17.)

The proposed solution of the realisation problem of Marx', the monetisation of produced surplus value, follows the modus of the "Tableau Economique" of Quesnay's. At the end of the capital circuit, in the C'-M' sequence, the capitalists are injecting an additional amount of money to realise the produced surplus value in money. Logically this seems to be a non-solution to the realisation problem, it is rather a dissolution, and it is called paradoxical by Marx.

> "In der Tat, so paradox es auf den ersten Blick scheint, die Kapitalistenklasse selbst wirft das Geld in Zirkulation, das zur Realisierung des in den Waren steckenden Mehrwert dient." (In fact, as paradoxical as it looks immediately, the class of capitalists themselves throws into circulation the money, that serves the realisation of the surplus-value embedded in the commodities.)
>
> (Marx, 1969, vol.2, 2.sec., chapt. 17.)

In the first sequence of the circuit, M-C, the financing joint, money is thrown into the circuit buying production goods, c, and labourpower, v. Where c is the value of money payments from one capitalist to another, money that can buy back the c part of the value of the final product. And v is the value of the money payment from capitalists to workers, money that can buy back the v part of the value of the final product. The total value of the product in the circuit is c+v+s. To monetise s, the produced surplus value, the proposal is that additional money is brought into circulation within the class of capitalists. What one capitalist gains in money another loses. The arithmetic is as simple as in the quantity equation of money. Depending on the additional amount of money thrown into the C'-M' realisation sequence, the solution demands just that $s = t * \Delta M$, with t as the number of turnovers of ΔM in the sequence. Any $\Delta M > 0$ will do the job in finite chronological time. During which ΔM is moving between the accounts of the capitalists, from one capitalists account to another's, each time carrying into effect as money profit 1/t of the macro surplus value on the receiving accounts[3].

This is in contradistinction to the "Tableau", which illustrates the *re*produc-tion of the production system through exchanges between three social classes, with money solely as a means of exchange. No part of the stock of money, a stock equalling the netproduct of macroproduction, is entering as money-capital. In the "Tableau" of Quesnay's there is no monetary profit to be found.

The paradox can be resolved into a *non-sequitur* in macroaccounting of the monetary profit, the realisation of surplus value, in the circuit. It is in the format of a logical time trick, separating the single consecutive steps in the circulating of ΔM, reckoning only the monetisation of surplus value in each step. Then by ignoring the time aspect, the t-fold monetisation of $1/t = \Delta M$ of the total s, solves the realisation

[3]Perhaps too farfetched, but this arithmetic is not sufficient, we also have to show the distribution of the process of circulating ΔM to exactly monetise the surplus value on every single account.

problem. The *class* of capitalists is not shown to have realised the surplus value as a monetary profit within the same sequence, i.e. simultaneously; as demanded by the contextual logic of one circuit. The t epicycles do not produce the total cycle.

The legacy of this first intellectual suppression of the logical problem in any monetary theory of production is still alive in Schumpeter via Keynes and onward[4]. This is not the conclusion drawn by Marx, however.

> "Mit Bezug auf die ganze Kapitalistenklasse erscheint aber der Satz, dass sie das Geld zur Realisation ihres Mehrwerts (resp. auch zur Zirkulation ihre Kapitals, konstante und variablen) selbst in die Zirkulation werfen muss, nicht nur nicht paradox, sondern als notwendige Bedingung des ganzen Mechanismus: denn hier gibt es nur zwei Klassen: die Arbeiterklasse, die nur über ihre Arbeitskraft verfügt; die Kapitalistenklasse, die im Monopolbesitz der gesellschaftlichen Produktionsmittel wie des Geldes ist." (But regarding the whole class of capitalists the sentence, that they themselves have to throw the money for realising their surplusvalue (respectively also for circulation their capital, constant and variable) appears not only non-paradoxical, it is the necessary condition for the whole mechanism: because here there are only two classes: the working class, that only dispose of their labourpower; the capitalist class, who hold the social means of production as well as the money in their possession of monopoly.)
>
> (Marx, 1969, vol.2, 2.sec., chapt. 20.)

3 The perennial problem in Keynes' analysis in G.T. and preparatory works

The concept of surplus value figures as 'quasi rent' in Keynes' preparatory works on "The General Theory of Employment, Interest and Money"(G.T), among other in the various sketches of dispositions and chapters published in C.W. xiii, xiv and xxix. It is remarkable, however, that the concept of 'quasi rent' is nowhere to be found in G.T.[5]

In the preparatory works, i.e. before August 1935 (see infra), aggregate income, Y, is defined by, Y=E+Q, the sum of **E**arnings and **Q**uasi-rents. This is the precondition for the conceptually harnessed truism of Y=E+Q=C+I=D. In which the last three concepts are **C**onsumption, **I**nvestment and **D**isbursement. There are two disbursements; D=E+Q at the financing joint, and D=C+I at the realisation joint.

The meaning of the truism is determined by the definitions. In these aggregated, or macroeconomic expressions, E stands for aggregate wages, while Q is aggregate profits. "Now quasi-rent is the excess of the sale proceeds of output over its variable cost." The designation and concept 'quasi-rent' is Marshallian as an income not balanced by real cost, "...quasi-rent 'is no part of cost under any condition'..." While 'Earnings' corresponds to and equals variable costs as wage outlays[6].

[4]May be with the theory of monetary emissions as an exception. See e.g. Cencini (2005)

[5]In G.T the only remnant of 'quasi-rents' are in the series of prospective yields of an investment, they are designated $Q_1, Q_2 ... Q_n$ in chapter 11, "The Marginal Efficiency of Capital."

[6]C.W., xxix, p.108 and xiv, p. 419. In the economics of Marshall 'quasi-rent' is a concept belonging to the description of transient disequilibria, as a revenue *in addition* to the real or

Keynes is applying 'quasi-rent' as a concept for profit as such. Indicating the monetary surplus of entrepreneurs. An entrepreneur-economy can never be in equilibrium if expected quasi-rents are priced out in the market. If an entrepreneur is not expecting a monetary return surpassing the outlays of money for hiring labour, there will be no production in the first place.

The disappearance of *quasi rent* can be dated quite closely as M. Keynes writes to R.F. Harrod on the 9th of August 1935:

> "I am bothered about Your comment of galley 29....This does not matter, since I have managed to delete the whole of the chapter dealing with quasi-rent. But surely one means by quasi-rent the excess price over *average* cost, multiplied by the number of units?"
>
> (C.W. xiii, p.538.)

This marks the end of an extensive exchange on the exact definitions and interpretation of two Marshallian concepts, quasi-rent and user cost, of which the former is deleted but the latter occupies ample space in G.T.

They are introduced by Keynes in this lengthy quote:

> "There remains a further term of great importance and usefulness still to be introduced, namely quasi-rent. By an adaptation of Marshall's convenient term, I shall designate by *quasi-rent* the excess of the sales proceeds of output (or more strictly, as we shall see in the next chapter, the *expected excess*) over its prime cost.
>
> Thus, on this definition, quasi-rent is the *whole* of this return to an entrepreneur in respect of his equipment and includes user cost....The excess of quasi-rent over user cost it will be convenient to call net quasi-rent. It follows that prime cost and net quasi-rent together comprise the whole of income."
>
> (C.W. xiv, p.412.)

In a one commodity economy or a real economy with specified demand and supply-functions, the meaning, if not the logic, of an expression as C+I=E+Q=Y is straight forward. In perfect competition, i.e. long run equilibrium, the numeraire-sum Y can be decomposed into factor costs, E, and a producers-surplus, Q. Total income is produced as C and I, and at the same time distributed as E and Q, both processes adding up to Y[7]. Albeit the meaning is straight forward here, it becomes strained in a monetary economy

natural rate of interest on capital. The occurrence of this 'pure profit' is caused by alterations in industrial or commercial activities of an entrepreneur, disturbing a partial market equilibrium. In the longer run all entrepreneurs can mimic the activities and thereby outcompete quasi-rent as a phenomenon in the economy. Otherwise, for some institutional or situational reasons, quasi- turns into monopoly-rents.

[7]A great part of the pre-G.T. discussions centered on the understanding of Marshallian terms and analysis, and the modifications or redirections essayed by Keynes in the endeavour to exploit them in a *monetary theory of production.* E.g. should quasi-rent be a part of supply-price? And should they be reckoned gross or net? The difference being Keynes' user cost. But "...it is not possible to say how far his deductions from gross proceeds to arrive at quasi-rent is the same as my user cost. The reader will find that Marshall avoids the *conundrums* and there is no clue as to how he would answer them." (C.W. xiv, p.412.)

Writing the expression above as D=C+I=E+Q, with D as disbursement of money, confounds the interpretation. With D_f=E+Q as the financing joint, and D_r=C+I as the realisation joint in the circuit. We are back at square one in the history of political economy, Marx non-solution of the realisation problem. D = E+Q, signifies that the financing of production includes the profit to be realised at the realisation joint, D=C+I. Precluding real quasi-rents to be realised as a monetary profit, as they are already financed or monetised; and therefore figure as a liability entry in the financial sphere, even before they are to be realised. Arithmetically the demand is D_r to exceed D_f. And this states the perennial problem. To dispose of the word 'quasi-rent', as Keynes did before publishing G.T., does not dispose of the perennial problem. A problem that is to linger on during the reception history of G.T. until these days. Harrod signalled the unsolved problems in his reply to Keynes.

> "I am very glad to hear of your simplification of the chapters dealing with user cost, income etc. because, tho' very interesting, they did provide a curious stumbling block for the average educated reader...(and economists irrespective of their upbringing, my comment)"
>
> (C.W. xiv, p.539.)

'Quasi-rent' is disposed of, but G .T. preserves 'user cost', and offers a "beside the point" appendix on that very concept. It created massive interpretative disturbances. As almost envisaged by Harrod in the same quotation.

> "Prime cost proper, viz. those which can be avoided by not undertaking output in the short period, divide into prime-factor costs, viz. those involved in employing concurrently ultimate factors of production, labour, short loans etc. and user costs or supplementary factor costs, viz. those involved in using machinery, - generally, the products of prime-factors employed in the past. They are prime costs because they can be avoided by not using the machinery, but they are not prime-factor costs because they do not involve the concurrent employment of ultimate factors of production (but aren't necessarily paid out to anyone as income).
>
> (C.W. xiii, p.539, our underlignings but the brackets are Harrods.)

Conceptually, this quotation is a half-way house, but has the germane point that cost/income has to be accounted for but they are not necessarily paid out in monetary liabilities. Harrod is envisaging income created in the production sphere, with no counterpoise in the financial or monetary sphere.

3.1 The choice of units, effective demand and income in G.T.

Dudley Dillard has the felicitous characterisation of G.T. as "another essay in persuasion" (Dillard, 1954, p.10) as the work has an explicit normative purpose: 'To prevent poverty amidst potential wealth'. This circumscribes the peculiar mixture of precise logic in the single arguments and disturbing *non sequitur*s in the composition

of G.T. Keynes wants to preserve capitalism and to get rid of its experienced social insecurity. That is to preserve the institution of money-wage labour, a non-casino financial sector and, at the same time, to assure stable full employment.

1. A strict logical demand leads Keynes to reduce the scope of the analysis in G.T. to the short run. And to employ a monetary unit and wage-unit as the only economic measures. "Obviously our quantitative analysis must be expressed without using any quantitatively vague expressions."(G.T, p.39). This to prevent the logical distortions of index numbers. "In dealing with the theory of employment I propose, therefore, to make use of only two fundamental units of quantity, namely, quantities of money-values and quantities of employment."(G.T, p.41)

2. The pivotal concept 'effective demand' designates the entrepreneurs decision to produce *in toto*, it is expressed as an number of wage-units, that is a number of units of money. At the financial joint this measures the monetary financing of production. It is the financial disbursement, D_f, of the circuit. As such it is an empirical fact, and is therefore what it happens to be.

   Theoretically effective demand can be determined in many ways. To keep in touch with the Marshallian methodology, Keynes wants us to apprehend 'effective demand' as an aggregate equilibrium of the expected monetary proceeds by employing N units of labour, and the costs of employing the same N units of labour, the supply price. Effective demand is not a point on a specified growth path or business cycle, it is a pure imagined magnitude but not "a vague quantitative expression"[8].

3. Finally income is defined as the disbursement, D_r, that realises C+I including the prospective yields, the profit. Now the two joints of the circuit are logically confronted, as in the case of Marx. This is done, or rather not done, over 20 pages of text in chapter 6 of G.T., "The Definition of Income, Saving and Investment", including an "Appendix of User Cost" of more than 7 pages. In all these pages an explicit textual confrontation of D_f and D_r is circumvented.(see infra).

A direct textual analysis, founded or not founded in an economic pre-understanding, reveals that the chapter is inconclusive. On one hand we have in the opening quotation:[9]

[8]A lot of effort has been spent on the construction of the two macro functions of demand and supply to generate the equilibrium. It has distracted from Keynes strict logical demands and been inconclusive till now. The semantic aporia introduced by Keynes' multiplier has opened the doors for these infelicitous efforts. In this inconsistent story we are told that effective demand is the factual decision of entrepreneurs to produce Y by employing N units of labour. With a resulting, not decided, Y as a multiplum of effective demand thus defined. This is an example of a widely accepted *non sequitur* in the composition of G.T.

[9]The quotation is modified as to present the macro definitions, excluding inter entrepreneurial disbursements. This is inconsequential for textual analysis. But is conceals Keynes confusing sociological classification in this paragraph, where a new macro entity, 'consumers' is introduced not to be used any further but demanding a new conceptual demarcation. "Expenditure on con-

> "During any period of time the entrepreneurs will have sold finished output for a certain sum which we will designate as **A**. And they will end up with a capital equipment, which term includes both stocks of unfinished goods or working capital and stocks of finished goods, both together having a value **G**."
>
> (Transcription of the first paragraph in G.T, p.52)

To calculate aggregate profit we have to deduct factor costs, **F**, the earnings, E, in Keynes' preparatory works, that is aggregate profits equals **A-F**; with the *proviso* that:

> "We must...deduct...a certain sum, to represent that part of its value which has been (in some sense) contributed by the equipment inherited from the previous period...The problem of defining income is solved as soon as we have found a satisfactory method for calculating this deduction."
>
> (G.T, p.52)

This deduction is designated 'user cost', **U**, and specified as the net value sacrifice of preexisting capital equipment, as defined above, in obtaining A. The income of the entrepreneurs is now specified as **A-F-U**, *the* central concept in Keynes' analysis. It is the maximand determining effective demand, once more underlined in this definitional chapter as,

> "Furthermore, the *effective demand* is simply the aggregate income (or proceeds) which the entrepreneurs expect to receive, inclusive of the incomes which they will hand on to the other factors of production, from the amount of current employment which they decide to give."
>
> (G.T, p.55)

Is the maximand, as specified, satisfying Keynes methodologic statement: "Obviously our quantitative analysis must be expressed without using any quantitatively vague expressions."?[10] Probably not, and that could explain the circumventions in the text. This quotation from a 1935 proof version of the chapter, then called "The Meaning of Income."(C.W., xiv), could be an indication:

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sumption during any period must mean the value of goods sold to consumers during that period, which throws us back to the question of what is meant by the consumer-purchaser. Any reasonable definition of the line between consumer-purchasers and investor-purchasers will serve us equally well, provided that it is consistently applied." (G.T, p.61) Besides, this has not much relevance for our task, as the consumption of entrepreneurs generates no monetary profit in toto.

[10] One could perhaps say, that in this primarily taxonomic chapter on definitions, Keynes is too occupied by his views and theoretical proposals for modelling the behaviour of the entrepreneur, at the expense of following the monetary and financial logic of a monetary theory of production. Hence, perhaps, the textual penumbra of the composition. We have omitted the concept of supplementary cost in the text, as this is an example of something relevant for behaviour but of no direct relevance for the logic involved.

> "The difficulty in arriving at a definition of *income* is due to the fact that the amount of the sales proceeds of any article is a *gross* figure...some deduction has to be made from the gross sale proceeds in order to arrive at a measure of what can be regarded as income...it is not immediately obvious what this deduction should be.(p.399)...there is a constant leakage going on in the circulation of income (quite apart from saving) unless entrepreneurs are making it good by new investment equal to what they have deducted from the gross price to cover user cost...For user cost is *financial* provision made by the entrepreneur...If the entrepreneur's actual financial deduction from gross price which he regards in no sense and in no circumstances available as income, could be laid down by an **infallible formula**, then I should define *income* as what remains after this deduction. **But there is no such formula**.
>
> (C.W., p.417, our emphasis)

One could add, and pace Hayek, "we leave it to the financial market to decide".

It is not easy to see how the concept and definition of user cost could solve these problems, nonetheless this proof chapter is concluding with user cost as the relevant deduction taking us out of vagueness:

> "If, nevertheless, I prefer, on balance of considerations, the more precise definition set forth above, it is mainly on account of the difficulty in the way of using a vague concept consistently."
>
> (C.W., p.418, our emphasis)

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4 A consequential logical conclusion

Allowing effective demand, as expected aggregate income, to be directly confronted with the actual realised sales of finished products, **A**, the primo and ultimo disbursements, D_f and D_r, highlights the financial and monetary problem to be solved. We have to account for all three elements **A**, **F** and **U**. As they are arithmetically configured in the expression of macro profit, **A-F-U**.

Now, we have effective demand as expectations, an imaginary monetary quantity, effecting factor payments of **F**. These payments make up the wage-bill as disbursement, D_f, of monetary liabilities, received as assets in the accounts of wage-earners, and financing production as money-income of labour; as they are 'handed out to the other factors of production' by the entrepreneurs.[11]

The next question concerns the **A-F** quantity of money. What could be its financial source, as it is not a part of D_f? The only possibility is a monetary liability of non-entrepreneurs. In a global economy, and disregarding the state or government, it can only be net consumer loans acquired by wage-earners. A net credit financed consumption demand, taking a disaggregated look at the wage earners accounts, net

[11] At the macrolevel the only factor is labour

means a credit exceeding the savings out of wages. This allows a monetary profit to be obtained as profit inflation in the consumer good prices. D_r exceeds D_f as a result of financial transactions *sui generis*.

Excluding the credit case, A, the total sale of the entrepreneurs, as disbursement D_r, can at most equal D_f, the initial financing of production. This leaves U, user cost, to embody an eventual profit.

To investigate this is an involved semantic task having Keynes works as the text-book. He is presenting the term in rather misleading ways. There is user cost for the individual entrepreneur, and macro user cost. Next user cost is presented as "...what has been sacrificed (one way or another) to produce A."(G.T, p.53) terminating in the macro view as an **imaginary** quantity consisting of the value of ultimo investments minus the opportunity costs of using the primo existing capital equipment. All in all turning relevant macro user cost into a **negative quantity** of value. Not a sacrifice but a profit in the normal case. Not a deduction of **U** from gross **A** but an imaginary monetary addition of **U**.

User cost defined as U=(G'-B') - G is in the end turned into -U=G-(G'-B'), in the normal or general case where investment as a real phenomenon, G, is imagined or valued in monetary macro accounting, as exceeding the likewise imagined phenomenon and value, opportunity cost, (G'-B'). G' as the value of the primo existing capital equipment, valued ultimo, and B' as the labour cost of keeping its worth as G'.

The consequential conclusion for the monetary circuit is the following:

> "...aggregate income is equal to **A-U**"
>
> (G.T, p.54)

To be understood as: **A** is an empirical fact at the realisation joint as disbursement D_r, that at most equals the financing at the financing joint of the circuit, D_f. **A** is money. And **U** is an imagined negative value quantity, exactly expressed in money terms, the result of macro accounting. But **U** is **not**, it cannot be, an empiric monetary phenomenon at the realisation joint.

Summing up in profit terms, the maximand in a monetary production economy, using as symbols **I** for G, **Q** for profits and **S** for savings out of money-income, i.e. wages:

1. Q = A-F+I
2. Q+F-A = I
3. F-A = S
4. Q+S = I
5. Q = I-S

The monetising and accounting of profits is summarised in accordance with a *reconstructed* logic of Keynes' monetary theory of production and its conceptualisation. In the deducted expression 5., Q is an imagined monetary quantity. As the

difference between I, also an imagined monetary quantity, and S as an empirical monetary quantity.[12]

4.1 Two minor interpretations of the connectivity of the production and financial spheres as an exit

a. An explicit connection between production, reproduction and finance is touched upon in the quotation on page 9, above:

> "...For user cost is financial provision made by the entrepreneur...If the entrepreneur's actual financial deduction from gross price which he regards in no sense and in no circumstances available as income, could be laid down by an infallible formula, then I should define income as what remains after this deduction."

Now, if user cost is a financial provision made by the entrepreneur, it must mean that he is making a deposit or buying a financial asset on the financial market by the user cost part of the cash amount A, his sales proceeds. This is in the case of user cost being positive.

Would this imply, mutatis mutandis, that his financial provision would be to monetise the user costs in the case where they are negative? That is, using the imaginary value emerging in the production circuit as a collateral for obtaining money in the financial sphere? Could be so. The transaction would expand the liquidity position of the entrepreneur, make it possible to expand his future scale of production, but the transaction, in itself, would not increase his actual profit or income. Infallible formula for valuing U, in this case I, or not. But accepted as such on the financial markets.

Going back to the original case of Keynes'. As A, at most equals F, the wages, a deduction by U as a positive amount of money to be absorbed in the financial sector, would with certainty reduce the disbursement, D_f, for financing the next round of production. Thereby reducing employment per definition.

There is no symmetri in the two cases, expansion is a possibility with negative U, contraction is a necessity when U is positive in these thought experiments. With one caveat, are we considering a single entrepreneur out of many, or the entrepreneurs in toto? In the former case the logic is impeccable. But what about the latter? To prevent a fallacy of composition to enter our macro economic analysis of the connectivity of the production and financial spheres, it is the latter case that matters.

b. Accepting the possibility of D_r exceeding D_f by way of wage-earners consumption credits, and thereby allowing a positive monetary profit, the logic of the connectivity tells that this profit will turn into a bigger deficit. Only as long

[12]The imagined quantity (G'-B') is ignored as it has no relevance for the monetary or financial logic, albeit it is a quantity that plausibly could have an impact on expectation conditioned behaviour of the entrepreneurs.

as the original credit is Ponzi financed is it still possible to have the wage, E, in its entirety, as a demand for consumption goods. Any future servicing of the debt, by the wage earners, will reduce profits as an increase in S.

5 Framing the profit question anew

So far we have searched for a monetary profit in traditional transaction based accounts in the history of economic theory.[13]. We have searched for a consistent and significant concept of national income that could be split into a wage part and a profit part. We have not succeeded in finding such a concept.

Nonetheless production does take place, which forces us to ask whether Marx and Keynes were wrong in asserting that the motive for producing in a capitalist economy is to gain a monetary profit. But before we jump to such a reverting conclusion we must ascertain that we are searching for the right concept of profit. The closest we have come to a meaningful concept of monetary profit is in our rather exegetic reading of Keynes and our idea that Keynes may have thought of user cost as a negative magnitude capturing capital gain.

To approach this idea from a different angle we need to consult accounting from the perspective of the corporate sector in search for the concept of profit experienced by the sector itself. Before we proceed, let us note another peculiarity in the literature referred to so far. For anyone who has opened Keynes' General Theory there can be no doubt that he found financial markets to play an essential role in the determination of employment. Still financial markets have only marginally been involved in the search of monetary profits so far. This causes us to pay particular interest in any possible joints between the real and the financial spheres.

5.1 The concept of income in economics and accounting

Clearly there is a large degree of confluence between economics and accounting when it comes to defining income, but where accounting feels under obligation to weight certainty over relevance, economics can venture to emphasize theoretical relevance.[14] It is noticeable that this difference has implicated that economics and accounting have switched their positions on the definition of income during the last century - economists taking the original stance of accounting and vice versa.

The original stance of economics was to define income from revenues minus expenditures, i.e. from transaction flows within the period, whereas accountants originally looked at the balance sheet to measure income as a change in the stock of wealth. This depicts the two fundamentally different approaches to reaching the flow of income. Income may be attained from other flows within the period (i.e. from the income or transactions statement of accounts), or it may be attained by considering the value of stocks at the beginning and the end of the period (i.e. from the balance sheet of accounts). Unfortunately, as already obvious from Keynes

[13]This flow approach is also the approach taken by more recent contributors, e.g. Zazzaro (2003) and Renaud (2000)

[14]To quote Chang (1962)"The choice is between an irrelevant certainty or a relevant uncertainty."

discussion of user costs, the relation between the stock of capital and the flow of income is not immediately attainable.

> "For a long time the relationship of income to capital was likened to the relation of the fruit to the tree. Just as there was no difficulty in separating the crop from the tree, so there need be no difficulty in distinguishing income from the capital which produced it. [...] The introduction of income tax depreciation allowances in Britain in 1878, and their growth in importance there and here since then, constitute a movement away from the idea that you can evaluate the fruit without giving thought to the value of the tree - that realized profits can be measured in disregard of what have sometimes been called "mere value changes" in the assets of the business."
>
> (Solomons, 1961)

From an accountants point of view Solomons argues that accounting, after having adopted the transactions based definition of profits, should revert to a definition of income that take changes in the value of stocks into consideration. He was one among several accountants trying in the sixties to convince the accounting society that they should take over the *economic* definition of income, namely the definition suggested by Hicks in Value and Capital, *"the maximum value which he [the consumer] can consume during a week and still expect to be as well off at the end of the week as he was at the beginning"*(Hicks, 1968).[15] The controversial word is expect. Accounting has a tradition of basing their statements on realized magnitudes, and the traditional *accounting* definition of income is the difference between revenues realized and costs consumed. In a dynamic world, economic income must be based on expected future cash flows.

As indicated by Chang below, it is not the two different approaches to attaining income that is the core of the dispute, but rather the question whether it is possible to agree on methods for deducing expectational magnitudes.

> "Moreover, in the measurement of business income, accountants emphasize the income statement and economists, the balance sheet. This does not mean, however, that accounting income cannot be measured through the balance sheet and economic income cannot be obtained from the income statement. For, if we value all assets except money items at their unabsorbed original costs, liabilities as the claims of creditors, and proprietorship as the difference between the two, then the change in proprietorship so measured from year beginning to the year end would equal accounting income derived from matching revenue and costs consumed through the tool of the income statement."
>
> (Chang, 1962)

[15]It seems rather paradoxical that accounting literature has a preference for quoting Hicks on the concepts of income when his chapter on income begins with the following words; "Nothing has been said about Income, about Saving...I do not believe that they are suitable tools for any analysis which aims at logical precision." (Hicks, 1968, p.171)

In a world characterized by general equilibrium there would be agreement between the value of assets and their original costs, and the *economic* measure of income would take over as the theoretically relevant one. One could rely on the market to provide the *true* value of assets. Without perfect markets to give this accordance, the context is different and accountants are left with the choice between certainty and relevance. In the sixties the accounting authorities stayed with certainty despite the strong case made for a shift to *economic* income. Only during recent years has the expectational based approach gained a footing with the legalization of mark-to-market - a legalization that is now blamed for adding to the financial meltdown in 2008!

This being the case or not, the conflict between *accounting* and *economic* income remains, and Solomons' argument against the illiberal focus on realized magnitudes is still valid - in particular with respect to the income relevant to behaviour within the corporate sector:

> Whether we use one concept of income or another, or indeed whether we use any concept of income at all, clearly should depend [...] on the purpose we want to serve and the income concept which will best serve it. [...] I shall concentrate my attention on [...] the measurement of business income for the purpose of assessing entrepreneurial success or failure in the profit-making sector of the economy. From this point of view it must be said that accounting income is seriously defective. By focusing attention on the result of current realization of assets and ignoring all other value changes except such as are covered by the "cost or market rule", and by depreciation, it can lead to some rather ridiculous results."
>
> (Solomons, 1961)

Our question is, whether the non-existence of monetary profits could be counted as one of these ridiculous results!

5.2 Stock-flow consistency - a road to reconciliation?

Stock-flow consistent modelling is often adduced as a method for reconciling the information from the transaction accounts and the balance sheet. The idea is to add an account for flow of funds illustrating how surpluses and deficits in the transaction accounts are distributed to assets and liabilities in the balance sheet...or how changes in assets and liabilities give rise to income flows! As already indicated, stock-flow consistency does not in itself solve any problems, but it may help us locate the sources of disagreement.

Today stock-flow consistency is primarily related to the Post Keynesian approach of e.g. Godley and Lavoie (2007) and Dos Santos and Zezza (2008). In opposition to what was described as the *economic* approach to the definition of income, in their eager *not to loose money into any black holes*, this approach appear, as we shall demonstrate, to stick with certainty rather than relevance.

The approach can be illustrated for our purpose by a set of rather stylized accounts; the transaction account, the balance sheet and the flow of funds (see table

Table 1: Current transaction flow matrix

	House-holds	Firms		Bank	Total
		current	capital		
Consumption	$-C$	$+C$			0
Investment		$+\Delta K$	$-\Delta K$		0
Wages	$+W$	$-W$			0
interest D	$+i_d Dh$	$+i_d Df$		$-i_d D$	0
interest L	$-i_l Lh$	$-i_l Lf$		$+i_l L$	0
dividends	$+F$	-F			0
$\sum$	$SAVh$	Fu	$-\Delta K$	≈ 0	0

Table 2: Balance sheet

	House-holds	Firms	Bank	Total
Deposits	$+D_h$	$+D_f$	$-D$	0
Loans	$-L_h$	$-L_f$	$+L$	0
Capital		$+K$		$+K$
Equities	+pEh	-pEf		0
Net worth	Vh	Vf	Vb	K

Table 3: Flow of Funds

	House-holds	Firms	Bank	Total
Savings	$SAVh$	Fu	≈ 0	SAV
ΔDepos.	$-\Delta Dh$	$-\Delta Df$	$+\Delta D$	0
ΔLoans	$+\Delta Lh$	$+\Delta Lf$	$-\Delta L$	0
ΔEquity	$-p\Delta E$	$+p\Delta E$		0
ΔCapital		$-\Delta K$		$-\Delta K$
$\sum$	0	0	0	$SAV = \Delta K$
revaluations	ΔpE_{t-1}	$-\Delta pE_{t-1}$		0

1-3)[16]. Investment as a change in the stock of capital(ΔK), has its counterpart in savings (SAV) or retained profit(Fu), (Table 1). A profit which cannot be regarded as a monetary profit to firms since it has already been tied up in current investment. It is a real profit which is measured in money by its cost.

It follows from the balance sheet (Table 2) that the net wealth of the economy as a whole is a real wealth in the form of a capital stock held by firms and owned by households through their possession of firms equity. Revaluation of equity has no impact on aggregate wealth since it is an asset to households, but a liability to firms.

The flow of funds account (Table 3) merely repeats the fact that investment is financed by savings. Thus the Post Keynesian approach to stock-flow consistency does not leave much room for finance. Firms earn a real profit - not a monetary profit, and with this real profit follows an obligation to satisfy the lenders who have financed their real profit. As long as firms are allowed to finance their production, finance is only allowed impact only through the rate of interest. From this perspective there is no reason why instability of capitalist production should emerge or, alas, no reason for capitalist production!

Although certainly consistent, the Post Keynesian stock-flow consistent literature ignores the ability of K to generate future income - an ability that is constantly revalued at financial markets. To balance out this impact from financial markets appears to be a reminiscence from the C-M-C' nature of production - not M-C-M'! Where is the entrepreneurial motivation for starting up production in this world?

Other advocates of stock-flow consistency, operate without any reference to Keynes, and they stick with the *economic* definition of income, thus allowing revaluations an impact on income. Patterson and Stephenson clearly define stock-flow consistency as going *from* stocks *to* flows,

> "A pair of variables *x(t),y(t)* is said to be stock-flow consistent if
>
> $$y(t) = dx(t)/dt \tag{1}$$
>
> [...] That this definition is attractive in an economic context can be seen from some examples. If *x(t)* is the real value of wealth then real saving is the change in that real value over time. Thus real saving is the difference between income including any revaluations in net wealth and the consumption of non-durables and services. If *y(t)* is *net* investment then *x(t)* is the capital stock."
>
> (Patterson and Stephenson, 1988, p.789)

Godley and Lavoie on the other hand, emphasize that all rows and columns must add up to zero - that all flows must come from somewhere and go somewhere. But what they actually do it to cumulate all stocks from flows. To reach the zeros they

[16]The accounts and notations are simplified from Dos Santos and Zezza (2008). One simplification comparred to the original table is that we have left out the public sector. A complication is that we allow households as well as firm to have both loans and deposits. Further more we let the net worth of banks approximate zero, which implies that this sector does not purchase equity. This is all done to simplify - there are no logical problems attached to removing these simplifications.

are a little concerned that they have to enter equity at market price on the liability side of firms. But to reach the zeros they maintain that this is the correct way of treating equity. An implication is that equity prices do not enter the decisions of firms to produce and invest[17], and despite their aim to integrate finance, they do not have any experiments illustrating the consequences of such changes in the price of equity. In their model the logic is that equity is traded at market clearing prices determined within the model, i.e. the financial sphere is not an autonomous sphere that may generate its own set of expectations.

That Patterson and Stephenson's interpretation of stock-flow consistency differs from the Post Keynesian interpretation of Godley and Lavoie with respect to the weight assigned to the current market price of stocks, is elucidated by a reference to the same original ideas of Stone made by the two contributions:

> "Whilst the article by Meade and Stone (1941) may be regarded as laying the basis of the current system of, primarily cash or transaction orientated 'tables of national income, expenditure, savings and investment', clear reference was made therein to what we regard as a Hicksian concept of income. For in elaborating some of the problems in defining income they note that 'income from profits must be defined so as to include the appreciation in the money value of all these assets' (i.e. domestic and foreign assets)."[18]
>
> (Patterson and Stephenson, 1988, p.789)

> "The current treatment of profits in NIPA is thus consistent with the general principle that holding gains or losses, real or nominal, whatever their origin, should not influence the measure of income, saving or value added, which are flows, and hence should be relegated to revaluation accounts. In the view of the national accountants, stock appreciation SA is akin to a capital gain, and cannot be included within national income, which measures flows. Thus the overriding justification for deducting stock appreciation both from profits and changes in the value of inventories is that national accountants need a concept both of aggregate income and aggregate expenditure which is conceptually identical to production - as there is no counterpart to stock appreciation in production.
>
> [...] It must be said however that when the first national accounts came out, their progenitor, Richard Stone (1947:45,62), did include stock appreciation in the profits of productive firms [...], presumably as a direct transposition of business accounting."[19]
>
> (Godley and Lavoie, 2007, (our emphasis))

[17]Godley and Lavoie (2007) explicitly reject Tobin's q theories of investment p. 496. Instead they determine investment by a stock-flow norm based on expected sales.

[18]Meade, J.E. and Stone, R. (1941). "The construction of tables and national income, expenditure, savings and investment." *The Economic Journal* vol. 51 pp. 216-33.

[19]Stone, R. (1947) "Definition and measurement of the national income and related totals", appendix to *Measurement of National Income and the Construction of Social Accounts* UN: United Nations Press.

Whereas Patterson and Stephenson (1988) must conclude that revaluations, i.e. capital gains or losses, do have a net impact on national income, removing such revaluations of real assets from national accounting allows the Post Keynesian stock-flow consistent approach to talk about conservation of energy:

> "[...] inflation in capital goods prices (relative to the numeraire price)can lead to a net gain or loss to the economy. The other asset revaluations do, however, sum to zero."(Our emphasis)
>
> (Patterson and Stephenson, 1988, (our emphasis))

> "The fact that money stocks and flows must satisfy accounting identities in individual budgets and in an economy as a whole provides a fundamental law of macroeconomics analogous to the principle of conservation of energy in physics."
>
> (Godley and Cripps, 1983)

But observing real world phenomena as the 2008 financial crisis forces us to ask - does the economic system really entail a principle of conservation? If it does, how come we talk about great losses in a financial crisis? Where do these losses go - is there really a winner? Or were there no losses at all?

5.3 The world in which we happen to live...

The main argument for including revaluations in profits and national income must be that such revaluations are important to the phenomena we aim to measure and that they cannot be obtained from the transaction accounts. What can change stock magnitudes of the balance sheet apart from transaction flows? From the perspective of economic income the answer appear to be straight forward - any change in expected future net cash flows will cause a change in net present value of a given asset or liability. But this is really just pushing the question one step further. What causes these changes in expected cash flows?

We are now back where we started - at the joints between the real sphere of production and the sphere of finance. If we could only tie down one of these spheres, the remaining sphere could be treated as a given. At this point one solution is to make use of general equilibrium theory to determine the real sphere. If actors on financial markets can rest assure that the economy is in a state of general equilibrium, the efficient market hypothesis ascertains that the financial sphere adapts to the real sphere. Changes in expected future cash flows will only arise in response to changes in the real sphere. The revaluations of financial assets will have its root in the real sphere.

Another solution is to tie down the sphere of finance. If we can be sure that income cannot arise in the financial sphere, that a net gain is always balanced by a net loss, then we have also succeeded in isolating the real sphere from the financial sphere. It is not enough, however, to remove any net gains or losses in the aggregate by reference to accounting rules - they must also be removed in the minds of economic agents in the sense that *perceptions* of loss or gain must not

have an impact on behaviour. If this assumption holds, it is not possible for the financial sphere to disturb or destabilize the real sphere. In this case the real sphere need not be characterized by a state of general equilibrium - but we would still have an economy where aggregate production is determined by real decisions, namely decisions to demand produced goods.[20]

In both of these cases the economic system is enriched with a law of conservation, either in the form of general equilibrium theory or in the form of accounting rules. And any economic law of conservation emasculates the financial sphere - turns financial markets into giant casinos with no relevance to economics.

It should be obvious that *if* we could rest assured that either one of these laws of conservation do characterize *the world in which we happen to live*, we would be forced to stop our search here and conclude that Marx and Keynes must have been wrong. There can be no monetary profit and thus monetary profit cannot be the motivation for producing. It would not matter how we did our accounting; income flows could be deduced from stocks of assets and liabilities, or the value of assets and liabilities could be cumulated from flows of income. But Keynes did certainly not make such an assumption. Financial markets did have an impact on the real sphere of income generation. Thus if we want to understand Keynes we also need to make room for this financial impact in our definition of income.

6 An alternative concept of income

It is interesting to note that the ones presumably following Keynes, i.e. the stock-flow consistent literature, use an accounting definition of income while economists with a firm belief in general equilibrium usually argue for an economic definition of income. Interesting because, as already stated, with an assumption of general equilibrium, economic income and accounting income should add up to the same thing. For Post Keynesians, on the other hand, with their adherence to *fundamental uncertainty*, one should expect a large deviance between economic and accounting income - but still one should expect the idea of economic income to be the relevant one. When Post Keynesians stick to the accounting income, is it because they believe in its relevance to economic decision making, or is it because they value consistency over relevance, one could ask. Without the idea of general equilibrium, economic income is much more difficult to capture, but that should not make it any less relevant.

The only box in our simplified typology of income definitions and their use (Table 4) that may allow a positive monetary profit is the empty one - the combination of economic income in a Keynesian world. In this box we have to interpret *well off* in the Hicks quote above (p. 14) to mean a monetary valuation. And without the assumption of efficient markets we can still maintain that equity prices reflect the best guess as to what future cash flows are going to be. This box is not restricted by any laws of conservation. This box allows for a relation between the present and

[20]The careful reader may note at this point, that decisions to demand produced goods would still be under the influence of a rate of interest which, by the arguments of Keynes and Sraffa, cannot be given in the real sphere. This is true, of course, but in this case, what should destabilize the rate of interest apart from an irresponsible monetary policy?

Table 4: Typology of Income definitions and their use

	Neoclassical world Perfect markets Predictable world General equilibrium	**Keynesian world** Market imperfections Fundamental uncertainty Monetary production
Economic income	Mainstream economics	
Accounting income	Accounting theory	Post-keynesian stock-flow

the future, built on expectations of future cash flows in an uncertain world. Making use of economic income in an uncertain world implies no theoretical inconsistency, but it is not an easy road to pursue. There are no bindings on such expectations, and no reason why we should *not* experience booms and crashes in stock markets that affects the level of employment through the corporate sectors decisions to gain a monetary profit - or minimize any monetary losses.

6.1 Filling in the empty box: A *Below the line* concept of income

That it is not, in the aggregate, possible to objectively define a monetary profit, does not imply that aggregating accounts of firms and corporations, will not leave us with a positive aggregate monetary profit. Given what we have concluded so far, this is bound to be a subjective monetary profit, or at least an *unrealized* profit. But since we are searching for the motive for undertaking production, subjectivity at this point should be acceptable. If, further more, we follow conventions of accounting theory, the subjectivity is not necessarily inside the mind of a single economic decisionmaker. It will be a subjectivity which is accepted by other economic agents or institutions; the accountant, the tax authority, the stock market etc.

None of the definitions of income discussed so far, allow added value to enter the registered income. Yet, if we define income as the changes in monetary net worth within a given period, added value will be included as a part of the market evaluation of equity stock. How can we understand added value? It must be understood as the markets perception of the future earning capability of a corporation. Should added value be counted as corporate income? Again we must claim, that if a corporation did not expect an added value to their tangible assets, what would their motive for purchasing assets be? We are back at the motivation for producing. If anyone could collect a number of tangibles and have them evaluated at the exact same value as the specific firm, the firm would contribute with nothing.

A method suggested by Patterson, is to value K following the usual accounting rules, but fixing the value of equity as a liability to corporations at the issue price.

> "There are, however, some distinctions between conventions that should be adopted when dealing with national accounts, on the one hand, and corporate sector accounts on the other. Emphasising the importance

> of constructing income and balance sheet accounts on a sectoral consistent basis leads us to the usual national accounting convention of treating equities as a liability of the corporate sector. [...] On the other hand, it is usual in interpreting corporate sector accounts *not* to treat equities as liabilities. Indeed, if Q [i.e. Tobin's (1969) financial valuation ratio] is *always* equal to unity, treating all equities as a liability will result in a measure of net worth for the corporate sector which is *always* zero; with the consequence that variations in the values of assets and liabilities must necessarily cancel out in the aggregate, telling us little about the importance of relative price movements."[21]
>
> "The concept of wealth which is likely to be of economic interest excludes (some part of) equity as a liability of the corporate sector."
>
> (Patterson, 1990, pp.291,293)

Equity held is valued at the current market price whereas equity issued is fixed at its issue price. This makes the profit calculation and thus the production decision depend upon the moods of the financial markets. Financial markets are not only mediators between investors and savers, they also evaluate future returns on equity, and thus its monetary value. For the individual entrepreneur owning capital to which a monetary value is attached may appear to be just as good as holding money, but for the entrepreneurs as a whole, capital cannot be realized in the form of money - they cannot all sell at the same time. In this sense monetary production systems rest on an illusion that makes them fragile.

For the net worth of the economy as a whole this implies a dependence on equity prices. Changes is aggregate wealth is not equal to the flow of savings - revaluations of the stock of capital must be added! The exact method for this *below the line* measure of net worth is illustrated in Tables 5-7. The accounts again follow the tradition of stock-flow consistent modeling and the notation of Dos Santos and Zezza (2008), except for the treatment of equities. As has been emphasized by the financialisation literature (e.g. Skott and Ryoo (2008)), firms also hold equity. They may buy back their own equity, or choose to hold equity issued by other firms. Equity held by firms is therefore treated symmetrically to equity held by households. Equity emissions are entered at face value as a liability and equity holdings are entered at market value as an asset. Besides gaining a monetary profit on their positive holdings of equity, firms may gain a monetary profit by selling equity at a higher price than the original issue price or face value (Table 7).

If a firm issues equity in order to finance an investment, this operation will be neutral with respect to its net worth, i.e. capital goods (K) and equity issued (Es) will raise by the same magnitude. The net worth of the aggregate community thus depends on any deviation in the way the market evaluates K, i.e. the stock of real capital from the original price of K. Expectations enter the model as a magnitude that may be read at the market for equity. This also allows for the possibility that aggregate movements of equity prices are independent of the arithmetic mean of the prospects for individual firm. Stock-flow interactions may give financial markets a

[21] Tobin, J.A.(1969). A General Equilibrium Approach to Monetary Theory, *Journal of Money, Credit and Banking*. Vol. 1 pp. 15-29.

life of its own, which feeds back into the decisions to produce, invest and consume. In this case we do not have to model how agents form expectations on the performance of a specific firm - the stock market may have its own dynamics.

We now have an economy for which the net worth depends on ΔpE, i.e. the revaluation of production capital on financial markets. The economy as a whole may feel richer or poorer as equity prices go up and down. The sectoral net worths may enter the decisions to consume, produce and invest and thus economic activity. This model does not describe the origins of Δp. This is something to be handled by the theory of finance. If we combine our approach with traditional "efficient market" theory of finance we still cannot explain financial or economic crises. If, on the other hand Δp lives a life of its own as suggested by agent-based finance, econophysics or behavioural finance, our approach may help us explain how a financial crises turns into an economic crises. Integrating a theory of finance in our model may take us one step further and help us identify important feedback mechanisms between the real economy and financial markets. Mechanisms that appear to be important in understanding the current crises.

6.2 Focusing on the national economy

Our focus has been on a concept of income, and particularly a concept of monetary profits, that can help us understand the relationship between the real sphere and the monetary sphere. Our *below the line* concept of income can help us understand how the evaluation of corporate equity on financial markets may have an impact on the level of production. This is not the same as claiming that our concept should be used for calculating national income. Again, the concept of income applied should depend on what we aim to measure. If we are interested in economic dynamics and want to estimate next years income from current income, we suggest our *below the line* income measure. If, on the other hand, we want a measure of how much is actually produced within a period, our measure is not the relevant one.

7 Conclusion

When her Majesty Queen Elisabeth II posed the question at London School of Economics; *Why did no one see it coming?*, we, as a profession, could not provide her with a satisfactory answer. After having searched for a consistent concept of monetary profits, our explanation of this embarrasement must be, that economics has been too preoccupied pretending to be a *hard science*. So preoccupied that we have even adopted the idea of a law of conservation from physics. Anyone upholding a law of conservation will not see the fragile foundation on which the subject of our science rests. Our neglection of *the paradox of monetary profits* has also been a neglection of this fragility.

Economics has not been able to capture what, at least Marx and Keynes, regarded as the most fundamental fact of capitalist economies - that firms produce in order to gain a montary profit. If we accept this dictum, we must conclude that production rests on an illusion - an illusion that is created, maintained and destroyed on financial markets. Economic history tells us that all periods of great economic

Table 5: Balance sheet

	House-holds	Firms	Bank	Total
Deposits	$+D_h$	$+D_f$	$-D$	0
Loans	$-L_h$	$-L_f$	$+L$	0
Capital		$+K$		$+K$
Equities, held	+pEh	+pEf		+pE
Equities issued		-Es		-Es
Net worth	Vh	Vf	≈ 0	$K + pE - E^s$

Table 6: Current transaction flow matrix

	House-holds	Firms		Bank	Total
		current	capital		
Consumption	$-C$	$+C$			0
Investment		$+\Delta K$	$-\Delta K$		0
Wages	$+W$	$-W$			0
interest D	$+i_d Dh$	$+i_d Df$		$-i_d D$	0
interest L	$-i_l Lh$	$-i_l Lf$		$+i_l L$	0
dividends	$+F_h$	$F_f - F$			0
$\sum$	$SAVh$	Fu	$-\Delta K$	≈ 0	0

Table 7: Flow of Funds

	House-holds	Firms	Bank	Total
Savings	$SAVh$	$SAVf$	≈ 0	SAV
ΔDepos.	$-\Delta Dh$	$-\Delta Df$	$+\Delta D$	0
ΔLoans	$+\Delta Lh$	$+\Delta Lf$	$-\Delta L$	0
ΔEquity	$-p\Delta Eh$	$-p\Delta Ef$		$-p\Delta E^s$
new issues		$+p\Delta E^s$		$+p\Delta E^s$
ΔCapital		$-\Delta K$		$-\Delta$K
$\sum$	0	0	0	$SAV = \Delta K$
revaluations				
Equity	ΔpEh_{t-1}	ΔpEf_{t-1}		ΔpE_{t-1}
new issues		$p\Delta E^s - \Delta E^s$		$p\Delta E^s - \Delta E^s$
ΔV	$\Delta Vh =$	$\Delta Vf =$	$\Delta Vb \approx 0$	$\Delta K+$
below	SAVh+	Fu+		$\Delta Ep+$
the line	$+\Delta pEh_{t-1}$	$\Delta pEf_{t-1}+$		ΔpE_{t-1}
income		$p\Delta E^s - \Delta E^s$		$-\Delta E^s$

prosperity, are accompanied by periods of financial distress. We cannot grow unless we create the illusion, but history tells that the illusion cannot be upheld forever. The real consequences of the illusion, the machines, the houses and the infrastructure, however remains after financial meltdowns, and has so far secured a long term trend of positive growth.

References

Cencini, A. (2005). *Macroeconomic Foundations of Macroeconomics*. Routledge.

Chang, E.C. (1962). Business income in accounting and economics, *The accounting review* vol. 37 issue 4 p. 636.

Dillard, D. (1954). "The Theory of a Monetary Economy" Dudley Dillard, in *Post Keynesian Economics* ed. Kenneth Kurihara, New Brunswick.

Dos Santos, C.H. (2006). Keynesian theorising during hard times: stock-flow consistent models as an unexplored "frontier" of Keynesian macroeconomics. *Cambridge Journal of Economics*, 30: 541-565.

Dos Santos, C.H. and G. Zezza (2008). A Simplified, Benchmark, Stock-Flow Consistent Post-Keynesian Growth Model. *Metroeconomica*, 59: 441-478.

Godley, W. and F. Cripps (1983). *Macroeconomics*. London, Fontana.

Godley, W. and M. Lavoie, (2007). *Monetary Economics - an integrated approach to credit, money, income, production and wealth*. Palgrave Macmillan.

Hicks, J.R. (1968). *Value and Capital* 2nd edn. Oxford University Press.

Keynes, J.M. (1986). The General Theory of Employment, Interest and Money, in Collected Writings of J.M. Keynes, VII, Macmillan 1986.

Keynes, J.M. (1987). *The Collected Writings of John Maynard Keynes*. London 1987. xii, xiv og xxix indicates the volume number.

Marx, K. (1969). *Das Kapital* the section and chapters are indicated as the citations are from the german Ullstein edition from 1969, Frankfurt am Main.

Patterson, K.D. (1990). Stock flow consistent income for industrial and commercial companies. Review of Income and Wealth, S. 36, 3: 289-308.

Patterson, K.D. and M.J.Stephenson (1988). Stock-flow consistent accounting: a macroeconomic perspective, The economic journal, vol. 98 no.392 p.787.

Renaud, J. (2000). The problem of the monetary realization of profits in a Post Keynesian sequential model: two solutions of the Kaleckian option, *Review of Political Economy*, vol. 12 no. 3.

Solomons, D. (1961). Economic and accounting concepts of income, *The accounting review* vol. 36 issue 3 p. 374.

Schumpeter, J.A. (1912). *Theorie der wirtschaftlichen Entwicklung*. Leipzig.

Skott, P. and S.Ryoo (2008). Macroeconomic implications of financialisation. Cambridge Journal of Economics, 32: 827-862.

Zazzaro, A. (2003). "How Heterodox is the heterodoxy of monetary circuit theory? The nature of money and the microeconomics of the circuit" in L.P. Rochon and S. Rossi (eds) *Modern theories of money: the nature and the role of money in capitalist economies*. Edward Elgar.