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Abstract

Main goal of this paper is to clarify the paradox of monetary profit. The definitions and formulas introduced will make it simple and straight forward to understand the paradox. In order to understand from where the profits or monetary profits of capitalists and firms emerge I examined the phrase of Marx, 'Die Gesamtklasse der Kapitalisten kann nichts aus der Zirkulation herausziehen, was nicht vorher hineingeworfen war.' and classified it as very confusing. I will show where this confusion comes from and show how to cope with problems alike in a systematic way by using definitions and formulas. As a bonus these formulas give us insight under which conditions the economy can be sustainable and that the relation between monetary profit for firms and savings for household defines a very limited solution space in which the economy can operate in a sustainable way and yet only considering the boundary condition for firm profit and household savings. It will also give us a clue where the motivation for participating in the economy comes from.

Keywords: monetary profit, paradox, Marx, Keynes, Capitalists

JEL Classification E11 · E12 · E20 · E25 · E44 · G00

1. Introduction

Main goal of this paper is to clarify the paradox of monetary profit. The definitions and formulas introduced will make it simple and straight forward to understand the paradox. As a bonus these formulas give us insight under which conditions the economy can be sustainable. As a start to understand the interaction between real production and the monetary world let us examine some well-known phrases from Marx which are also examined by Bruun & Heyn-Johnsen [2009] and many others:

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

'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 at first glance, the class of capitalists themselves throws the money, that serves the realization of the surplus-value embedded in the commodities, into circulation.)(Marx, 1969, vol.2, 2.sec., chapt. 17.)

'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. ' (Regarding the whole class of capitalists, the phrase, that they themselves have to throw in the money for realizing their surplus value (respectively also for circulation of their capital, constant and variable) appears not only non-paradoxical, it is a necessary condition for the whole mechanism: because here there are only two classes: the working class, that only disposes of their labor power; the capitalist class, who holds the social means of production as well as the money in their possession.)
(Marx, 1969, vol.2, 2.sec., chapt. 20.)

And here a phrase of Bruun and Heyn-Johnsen (2009) who examined Marx (1886) and Keynes [1936] with respect to this subject:
'So far we have searched for a monetary profit in traditional transaction based accounts in the history of economic theory. 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. '

and

'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 monetary 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 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.'

For an extensive historical overview of the profit paradox I like to refer to the paper by Tomasson and Bezemer (2010).

So far this short introduction to Marx' paradox.

2. Analysis

The first phrase of Marx seems to hold a paradox, because capitalists in the real world are making and expecting money in their pocket at the end of the transaction period. That reasoning is misleading and confusing though. Let me explain. Suppose the economy is a closed system, let us consider only fiat money and no stock of inventory is allowed. Let the capitalist borrow an amount Y equal to the value of total production. For that, money is created and the capitalist has a debt to e.g. a bank free of interest payment. Total production Y equals the loan W plus a profit Π for the capitalist. The loan (Y=M1 with M1 is the money available in the economy) of the capitalist has to be considered as the means to make payments possible. The ratio V=Y/M1 is a measure for the complex way the money diffuses through the economy, usually referred as the velocity of money and in a way also discussed by Marx. In most cases M1 is less than Y because we can use M1 several times in a year to generates income Y. V depends also on the business you are in. The capitalist lets workers produce goods with value Y and pays worker loan W for which they can buy C_w and C_w is a portion of total production Y, to be precise W = $(C_w/Y)*Y = C_w$. This will leave an amount Π = Y - C_w = Y - W which can be considered as profit Π for the capitalist. The confusing part is that the capitalist has to redistribute the profit to himself for which the remaining part of production have to be bought. In the end the capitalist can return the money, because he was paid Y=C+Π for selling his produced goods and has then repaid all his debt and has bought a part of production himself. Looking at this process we now can understand that the term 'thrown in' (hineingeworfen) is used with a focus on expecting money as profit out of the process, which is not possible in this example. We are talking about real goods, because money is in this case only a means to get real products out of the economy. In this case there is no way that the capitalist could have ended up with money under the conditions mentioned. Another confusing point is the use of the terms profit and monetary profit. In term of profit as

that part of income which is not wages than, as shown, the capitalist indeed made a profit, to be precise Π.

We now introduce the term Monetary Profit (MP) (negative or positive) with respect to an actor defined as the amount of Financial Asset (FA) change an actor experiences over a considered period. An actor can be a firm, a consumer, an economy sector, etc. A monetary profit is a flow.

Because, in this case, the capitalist's financial assets did not change nor the workers financial assets there can be no monetary profit for the capitalist because the monetary profit for the total economy as a whole is zero and the capitalist ends up with a part of the real products produced.

If on the other hand total production was sold for W to the workers, than it is obvious that this would leave the capitalist empty handed with no profit or no income depending whether you consider him as firm or as consumer.

If one would allow interest payments to and from banks this will not change the situation under the specified conditions, because also bank profit has to be distributed, in order to make it possible that total production will be sold and no inventory is left.

We conclude:

- The phrase of Marx: 'Die Gesamtklasse der Kapitalisten kann nichts aus der Zirkulation herausziehen, was nicht vorher hineingeworfen war.' is misleading because Marx is in an indirect way suggesting that the capitalist could make a monetary profit, which is not possible in his example.

An example of such an economy as described above is e.g. the landlord (possessing only land) and the workers who will work on his land and in return will give him part of the production of crop on the fields. In this case there is even no money involved at all.

Also Bruun (2009) and Keen (2010) give nice examples including interest payments to demonstrate how this will work out in a stock flow consistent (SFC) approach.

We remain with the question how is it possible that in the real world it seems that firms can make monetary profit. This brings us to another confusing part of redistributing the profit in our examples, because this really looks odd. Another problem is that the role of capitalist is not clearly defined, but let me come back to that later.

Let us now turn to an example with monetary profit and money. First thing we need is money (deposit, banknotes, coin, etc.). Money is created by generating a debt of the same amount and is of course done in most cases by banks and the debtor can be e.g. the government, a firm or a private person. In our example the capitalist can sell his profit in real products to the workers. If the workers have enough money than they can buy the goods, leaving the capitalist with more money and thus a monetary profit and the workers with a negative monetary profit, commonly named a negative saving. In case the workers had to borrow the

money, money would have been created, resulting in a monetary profit for the capitalist and a debt for the workers. And this is how capitalist, firms or other actors can make a monetary profit and it is the only way.

We conclude:

- A monetary profit for an entity is only possible if in the rest of the economy there is a monetary loss (total monetary profit equals zero). Now the capitalist of Marx can get more money out of the economy than he has thrown in, namely what has been thrown in by the workers in addition, which the workers borrow by going into debt or pays from existing savings.
- With respect to the remark of Bruun we conclude that it is a possibility but not a necessity for capitalist to gain a monetary profit to motivate them to participate in the economy.

But again this leave us with another question: Why would workers go into debt and will or can they continue doing this forever? Also this question will be addressed later.

Alternatively one could argue that what has been thrown in by capitalist and workers was indeed the same amount what the capitalist can get out of the economy, if you take the phrase of Marx literally. But again this was not intended to be this way as expressed in his other phrases prior mentioned.

Of course the reasoning is in agreement with $(S – I) = (G - T) + (E – M)$. I is equal to reinvestment plus new investment and reinvestment equals depreciation. S minus depreciation is the total profit of the private sector, which can be split up over different entities if you like and (S-I) is the total of monetary profit realized in the private sector.

In his article Keen (2010) gives in his first example a demonstration of a firm borrowing an amount from the bank in order to start doing business, and he shows that every entity can have its own profit/loss. The behavior equations are all related to balance position. The equilibrium conditions are calculated and results in a monetary loss for the firms with is equal to the combined monetary profit of banks and workers. And again the question rises can this continue forever.

Searching the internet I encountered a lot of stories and argumentations the like, but not very satisfactory, which motivated me to follow a more universal and fundamental approach.

3. A fundamental approach

The above mentioned examples of reasoning to tackle the problem confronted us with at least 4 main points to focus on to make the problem easier to understand:

- A clear definition of the actors and the way they can act as already mentioned
- The boundary of the system must be clear e.g. if something is 'thrown in' let us assume that this refers to the system under consideration.

- A clear definitions of real profit and monetary profit and other used concepts. How do we handle and classify produced goods if these are used as a payment for services?
- And the question: What motivates actors to participate in the economy? Monetary profit?

It is interesting to examine under what circumstances a profit, a real profit or a monetary profit can be made.

We start with some definitions :

4. Actors

What is confusing in the story of Marx is that the term capitalist, firm, worker and consumer are not used in a consistent way or perhaps not in a convenient way. In my opinion he used the terms capitalist and worker as a synonym for rich and poor. I would rather like to describe the different actors and the way they can act, as I also described in de la Fonteijne (2012).

- actors: firms, banks, insurance companies, government, households and other institutions or sectors
- those actors can act as a producer and/or a consumer and/or investor and/or saver and/or etc.

Now there is a clear distinction between firms and capitalists (also consumers) even if the capitalists are owner of the firm.

5. Boundary conditions

Godley (2007) likes to describe the total system with his so called stock flow consistent (SFC) approach, but you may also describe part of the system as long as you specify the boundary condition. Keep in mind that it also have to be consistent with common bookkeeping rules.

6. Profit, real profit and monetary profit

Real Assets is Fixed Assets is buildings, machines, cars, infrastructure, houses and other things which can be considered as an investment and last normally longer than a year.

Financial Assets (FA, positive or negative) is chartal money, deposits, bonds, stocks, treasury notes, monetary gold, gold, etc. Capitalized consumer goods can be considered as Financial Assets.

Unsold goods (inventory) will be handled as an investment in Fixed Assets or Financial Assets.

For now we will exclude production processes, which are producing possible other financial assets like e.g. gold mining or bitcoin mining.

A Negative Financial Asset is equal to a Positive Financial Liability of the same value.

Net Financial Assets is equal to the sum of Financial Assets of an entity, which is equal to Financial Wealth, which is a term for equity.

The sum of all Fixed Assets is equal to the Real Wealth.

Wealth or total Wealth of an entity is the Real Wealth plus Financial and is an equity term.

We define a Monetary Profit (MP) (negative or positive) with respect to an actor as the amount of Financial Asset (FA) change an actor experiences over a considered period. An actor can be a firm, a consumer, an economy sector, etc. A monetary profit is a flow.

$$MP \ = \ \frac{d \ FA}{dt}$$

And in the same way we define a Real Profit (negative or positive) with respect to an actor as the amount of Real Asset change an actor experiences over a considered period. An actor can be a firm, a consumer, an economy sector, etc. A Real Profit is a flow.

I did not define e.g. a monetary profit by means of money creation, because than will cause the following problem. Suppose we create a deposit by means of debt creation. Then there is money created. As long those are both in the possession of one actor, there is money created but there is no change in financial asset for that actor, in which case no monetary profit was made.

If there a flow of financial asset from A to B then A experience a monetary loss and B a monetary profit. If you consider the system to be the economic unit A plus B than there is no monetary profit because the sum is zero.

You can handle a return flow in the same way.

In general, the sum of all assets is equal to the produced assets minus the consumption of assets and/or minus the depreciation of assets. This holds for Fixed (Real) Assets and for Financial Assets.

The concept of monetary profit is now defined in a universal way and you can use it for all entities, for all flows whether they fall within a certain time range or separately. You have to consider this concept as a tool to find out how a more complex case has to be classified. The word profit in monetary profit can also be interchanged, if you like, by saving in order not to confuse it with profit made by firms in the classical way of income minus costs.

We now have all the bits and pieces together to tackle the problem.

7. An odd example: Unsold goods as financial assets

We return to our problem of the workers and the capitalist. Suppose our closed economy contains the workers, the capitalist and a firm. The capitalist is delivering the resources for the firm, i.e. land, machinery, etc. The firm is producing only consumer goods. The workers will work in the firm. The capitalist promises to pay the workers there loan after a job done and

this is e.g. written on paper in the form of an IOU. This IOU can be considered as a financial asset. So after the transfer the firm is experiencing a monetary loss and the workers a financial profit. The workers can buy a part of the total production with this IOU. This transaction will result in an opposite flow of financial assets. The two transaction combined leave us with no monetary profit for the firm nor for the workers. But the firm end up with an unsold stock of consumer goods, i.e. the part not sold to the workers. As this stock can be considered as an investment by the firm and because these are consumer goods these are financial assets for the firm. Up until so far the balance sheets of the firm has improved with a financial asset equal to the value of the unsold goods. And the profit before dividend in the classical way for the firm is equal to the value of the unsold goods, because the production costs are lowered by this amount. This means that in this case a financial asset is created (produced) and the total of all financial assets is equal to this amount.

Now the firm can reward the capitalist for his capital services by paying him dividend in the form of the unsold goods. This is a monetary loss for the firm and combined with its former gain the firm will end up with no monetary profit. The dividend for capitalist has to be considered as income for the capitalist and is a financial asset because these are consumer goods. As soon as the capitalist consumes these goods, his savings (monetary profit), i.e. income minus consumption will become zero. For the entity firm the total monetary profit is zero. The capitalist as a consumer gain is also zero and all products are consumed. Still we can say that the firm has made profit before dividend.

On the traditional Loss and Profit account and Balance Sheets without dividend payment, with a few numbers in it, this will look like:

	L&P			Balance Sheet	
Sales		1000	equity or debt		1000
			reserve equity		200
Wages	1000		deposit or IOU	1000	
Inventory	-200		wages	-1000	
Profit	200		sales	1000	
			inventory	200	
	1000	1000		1200	1200

If you consider another example it is easy to show, following this procedure, how an entity can make a profit, a real profit or a monetary profit. If e.g. in our example a part of the capitalized unsold goods were sold with a profit margin to the workers for money they already possessed than this transaction is a monetary loss for the workers and a monetary profit (selling price minus capitalized unsold goods is equal to profit margin) to the firm and also a profit for the firm in the classical way equal to the profit margin value. If the workers had no money than money can be created by creating debt. Either way a monetary profit can

be made by the firm if there is, in this case, a consumers monetary loss. It is irrelevant if this money was created inside or outside the system, i.e. private or governmental money.

Again on the traditional Loss and Profit Account and Balance Sheet (as you can see we used the same relative profit margin) this will look like:

L&P				Balance Sheet		
sales		250		equity or dept		1000
				reserve equity		250
wages	0			deposit or IOU	1000	
inventory	200			wages		
profit	50			sales	250	
				inventory		
	250	250			1250	1250

Monetary Profit (and of course Financial Wealth) for the firm has increased in total by 250 and decreased by the same amount for the workers.

The monetary profit can be split into a chartal money part, a deposit part, a bond part or a change in product inventory part if you like to be more specific about the characteristics of the profit.

8. The short cut solving the monetary profit paradox

In national accounting inventory is not considered as a financial asset. By that definition the sum of financial assets over all entities is zero.

$$\sum FA = 0$$

And of course for the monetary profit being the derivative of the financial assets an equivalent relation holds

$$\sum MP = 0$$

Again we consider our closed economy with only consumers and firms with no investments. Then $(S - I) = S = 0$ for the private sector. S is equal to the sum of consumer savings S_{HH} and firm saving S_F and are both monetary profits in the same sense as we defined it, which is also equivalent to balance EMU savings used in National Accounting in the European Monetary Union. Firms can only make a monetary profit if consumers make a monetary loss.

In case S=I with inventory not considered as financial assets we will get the same results.

The general way how the monetary profit concept is presented can be used to analyze the profit on a standard L&P account and is determined by how profit is defined and so at what point in time the balance sheets are regarded .

9. Motivation to participate in the economical process

A motivation to participate in the economical process, as questioned by Bruun & Heyn-Johnsen (2009) seen from the point of view of consumers, firms or other actors might be perhaps more complicated than at first sight comes to mind especially if participants are motivated by consumption level and/or profit. Why would consumers want to go into debt, is that only to please the firms so they can make a monetary profit. That does not make sense so it seems. If we consider the purpose of money and if we worked only for the amount of money that would allow us to pay for the desired goods, than it was not necessary to go into debt and then money serves only as a means to pay in a convenient way.

If consumers and firms like to save some money for later use (making a monetary profit) than at least one other consumer, firm, bank, entity has to make a monetary loss, in which case money also has the purpose of stock (savings) for later use. And the reason for a consumer to go into debt is that he want to consume or invest before he earns it and pay back later. The reason why he can get a loan is because the bank (or other lender) estimates that he can pay his interest and will repay the loan.

For sustainability reason it seems reasonable to suppose that consumers want their savings S_{HH} minus investment to be greater than zero in the long run and the same holds for firm profit Π_F after e.g. interest payment, depreciation δK_F and dividend.

$(S_{HH} - I_{HH}) \geq 0$ and $\Pi_F \geq 0$ together with

$\Pi_F = S_F - \delta K_F = - S_{HH} + I_{HH} + \Delta K + (G - T) + (E - M)$

results in the condition for a sustainable economy:

$0 \leq (S_{HH} - I_{HH}) \leq \Delta K + (G - T) + (E - M)$

For a closed economy without government and without investments this results in the trivial solution that $S_{HH} = 0$ and profit $\Pi_F = 0$. This is also the only sustainable solution in the paradox of Marx. So a profit is not possible in this simple economy.

From this formula we also can determine under which conditions a profit greater than zero can be made.

Real Profit for firms (RP_F) is of course equal to ΔK and is equal to the increase of fixed assets.

That results in a monetary profit for firms

$$MP_F = \Pi_F - RP_F = - S_{HH} + I_{HH} + (G - T) + (E - M) = (S_F - I_F)$$

which is identical to balance savings for firms.

The above equations hold for the private sector and it motivates the definition of monetary profit (MP), although one could argue to give it another name (not being profit) to distinguish it as a concept of its own.

10. Some final remarks

As far as the use of the concept of stock flow consistency is concerned I did not examine how the dynamics of e.g. hoarding money can be described by this concept and how it will have influence on the subject we are investigating. In my simple example we did not deal with that problem, but it might be an interesting theme to investigate.

I also did not examine the case of using money for speculative use.

As far as I can judge all my findings presented here are stock flow consistent (Godley, 2007) and in agreement with how National Accounting takes place for the economy sectors and in agreement with commonly used bookkeeping rules.

11. Conclusion

- With the instruments of definitions and formulas in place the actual problem of not understanding where profit, if any, does come from disappears. And after all can you imagine a more elegant solution to a paradox than that it vanishes into thin air.
- With these instruments we can describe every arbitrary financial process in term of real or monetary profit.
- In National Accounting where inventory is not considered as a financial the flowing holds: In a closed system the sum of all Financial Assets is zero at all points in time and therefore the sum of all Monetary Profit is zero.
- If in a chosen entity or process a monetary profit exist than outside that entity or process there needs to be a monetary loss.
- A financial asset (FA) can be created by creating money (chartal money, deposits, bitcoins, etc.), capitalized unsold consumer product or by creation of another form of financial assets like IOU, stocks or bonds.
- Except for the products out of production all financial asset creation have as a counterpart a debt.
- New investment goods are real profit and can only be created by production.
- Financial Assets can serve as a mean to pay if the receiving party is willingly to accept or is forced to accept these payments by governmental regulation.
- With the concept of monetary profit we can limit ourselves to only the time period under consideration even if payments are postponed to a next period in case of supplier or consumer credit.

- The confusing part of the monetary profit paradox is mainly caused by a lack of definitions or a lack of using them.
- Strictly speaking there is no need for an economy to have monetary profit for firms.
- Money facilitates economic transactions and in general Financial Assets are a stimulator to economic activity.
- Debt as a counterpart of deposits is a facilitator of postponed consumption and is introducing flexibility by making savings as a stock possible.
- Even if debt is created to finance bubbles it is serving a need, although the debtor must be and remain capable in paying interest and repaying his debt.
- The last two points is a plea for endogenous money theory.

Acknowledgement

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