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Abstract

Marx made significant contributions to macroeconomics, laying the grounds for both Keynes's theory of aggregate demand and Schumpeter's theory of creative destruction. His law of the tendency of the rate of profit to fall parallels Alvin Hansen's theory of secular stagnation which has recently received much attention among scholars studying the financial crises in Japan, the US and the Eurozone. This article argues that part of the new stagnation does not result from a natural exhaustion of investment possibilities, but from an overly loose central bank monetary policy that keeps zombie banks and their zombie clients alive and blocks the emergence of new start-up firms.

JEL-Codes: B140, B510, E110, E320, E520.

Keywords: creative destruction, falling rate of profit, secular stagnation.

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1. Introduction

Socialism has lost the battle against capitalism. Inefficiency and tyranny were the foreseeable consequences of the attempt to organise a centralised economy on the basis of commands instead of monetary incentives. Once this finally became clear to everyone, the system collapsed. Does this make Marx obsolete? Certainly not, for although Marx forecast and called for the socialist revolution, he actually wrote very little about socialism itself, focusing instead on the way that capitalist market economies work. Many Marxist statements have been dismissed by economists, and the highly subjective value judgments that inform his analyses do not comply with the notion of scientific analysis that became universally accepted with Max Weber. Marx nevertheless expressed many interesting thoughts that had a lasting impact on subsequent research and contributed to the growth of knowledge in economics and other social sciences.

2. Social being determines consciousness

Marx's (1859) central thesis is that consciousness does not determine being, as Hegel argued, but on the contrary, being determines consciousness; or that objective production conditions ultimately determine the ideological superstructure in the form of the state, the laws and the majority view disseminated by the media. For Marx, there is no primacy of politics over the laws of economics. On the contrary, he argues that economic laws dictate the framework for politics. Systems that are not geared towards the laws of human behaviour and the objective scarcity of resources, but are merely set up based on the wishful thinking of ideologists, theologians and ethicists, collapse because they are economically unsustainable or cannot withstand competition from other systems. This is clearly demonstrated by the fate of communism itself. The fact that Marx's prophecy of a lasting transition to socialism turned out to be mistaken is proof of his main thesis of the primacy of economic conditions.

Economists disagree on this point with politicians, who constantly reaffirm the primacy of politics. Ironically, it is precisely left-wing politicians who believe in state intervention in markets, while economists point to the dominance of economic rules and argue that such intervention will often be ineffective, if not counterproductive. One only needs to consider the legislation on the minimum wage, the European bail-out packages, the role played by the European Central Bank or the rules on migrants' rights to welfare benefits, which are currently exercising strong magnetic effects. Like Marx, economists are convinced of the primacy of economic laws over the wishes of politicians and the media. In this respect

their views are often closer to those of Marx than the beliefs of those individuals who explicitly cite him.

The fact that economic laws take precedence over their political counterparts does not make the state superfluous. For the market economy is not anarchy but, on the contrary, requires a solid legal framework if it is to function at all. Civil law and tort law are the key elements of this framework since the basic precondition of the efficient exchange of goods and services is the protection of the property rights to them. Markets can only exercise their beneficial effects on the basis of protected property rights spanning labour, capital and land. There are naturally areas in which the market does not work properly on its own and should be complemented by state intervention. Such areas include the environment, for example, where market failures occur because markets for pollutants are not easy to create; or public goods which have a common quality for all consumers and, within limits, do not exhibit rivalry between them. The classic examples here are roads, bridges and dykes. Finally, the market also fails in the task of creating an income distribution that is perceived as fair. That is why the market economy has to be complemented with a welfare state, which redistributes wealth from rich to poor. However, this redistribution should be performed using fiscal instruments, primarily in the form of taxation and transfer systems, and should not occur via interventions in market prices, as is the case with the minimum wage. Interventions must only be made in accordance with market rules, and not in glaring contradiction to them. That is why economists prefer a system of wage subsidies to the minimum wage. As long as companies cannot be forced to recruit less productive individuals, it is not possible to have a market economy in which everyone is able to live on the labour that he or she is able to sell. It is, however, possible for the state to complement the market via wage subsidies so that everyone who wishes to work can do so and will earn enough to live off.

Marx held the view that an economy’s basis is constantly developing, while its ideological superstructure shaped by the opinions held by the ruling class (nowadays this could be referred to as the politico-media complex) is inflexible. The lack of flexibility in the ideological superstructure over the course of time leads to growing social tensions, which ultimately lead to upheavals, if not revolution.

What could be more relevant today than this statement? Given how the lower and middle classes of society in the USA and Britain, battered by the forces of globalisation and migration, successfully rose up against the establishment in 2016, Marx’s thesis seems to stand to perfect reason. The media and politicians did not foresee the results and were horrified that not everybody shared their views. The ping-pong exchange of sophisticated and

ideologically based opinions gave rise to a dream world that no longer corresponded to the economic reality. The fears and worries of those whose jobs were threatened by immigrants or lost because of imports of cheap products were forgotten, and the slump in the quality of the infrastructure and welfare systems available to domestic populations as a result of their use by migrants was overlooked.

The politico-media complex reacted to this reality check by asserting that people were the victims of populism, as if they didn't know that populists always govern in a democracy. Populists are always the others, those who are not (yet) in power and wish to deprive members of one's own party of lucrative government positions. What a distorted definition! The ruling classes have always failed to understand the insurgents of their day, who seriously call into question their position.

Trump's election as US president and the Brexit referendum result in the UK do not, of course, constitute revolutions in the Marxist sense of the term. However, they probably represent upheavals caused by the growing dichotomy between the ideological superstructure and the economic base. Whoever attributes the election results to the seductive charms of individuals like Donald Trump or Nigel Farage (former leader of the UK Independence Party) is merely scratching the surface of understanding.

3. Marx as an economist

Now let us look at Marx as an economist. Here opinions are divided. Marx's greatest scientific mistakes include the labour theory of value, which is primarily based on ideology. The assertion that the relative prices of goods in a market economy are basically derived from the working time spent on producing those goods is clearly false, for two reasons: first, wages are only one of a firm's multiple cost components; and second, prices are essentially 'scarcity prices' deriving their value from mutual competition for goods among consumers and their preferences. What, for example, does the price of a painting by Rembrandt have to do with the wage earned by the painter? What does the price of oil have to do with the wages earned by the worker who does the drilling? Nothing, or practically nothing.

Of course, Marx (1894) himself saw that the relative prices of goods were very different from those forecast by his labour value mantra, which is why he tried to modify his theory in the third volume of *Das Kapital* with his 'law of the equalisation of the general rate of profit'. He argued that the added value is distributed among companies and sectors via a change in relative prices in such a way that the same profit rate prevails across the board. This is true, but nevertheless represents a very clumsy attempt to correct the flaws in his theory.

For his concept that profit or surplus value results from the fact that wages are determined by the reproduction cost of labour is theoretically and empirically untenable. If this really were the case, workers would not have participated in the stormy developments of the productive powers of capitalism but would have continued to live in the miserable circumstances prevailing at the beginning of industrial revolution.

Thanks to Marx's obvious mistake in the field of distribution theory and the very closely related microeconomic price theory, the supreme discipline of economics, most Anglo-Saxon economists do not consider Marx as having made a major contribution to the history of economics. This was certainly the way that Paul Samuelson, the most important economist since the World War II, once presented the situation to the author in a private discussion;[1] and that is how many economists on the other side of the Atlantic see the issue.

4. The origins of macroeconomics

That view may be mistaken, however, for Marx's major contribution lies in macroeconomics. He was one of the first macroeconomists in history and laid the foundations of this sub-discipline. Marx (1867) conceptually defined the aggregates that form the basis of the OECD's national income accounts, which were subsequently formalised and completed by Richard Stone, winning him the Nobel Prize in 1984. Prior to Marx terms such as *national income*, *consumption* and *investment* were hardly of any importance in economics. Marx knew and explained that national income – as the sum of newly produced goods – could be used for consumption and the accumulation of capital. John Maynard Keynes was able to develop his theory of the importance of aggregate demand to economic stability only by using such aggregate concepts.

Based on his macroeconomic definitions, Marx (1885) developed a growth theory in the second volume of his magnum opus *Das Kapital* that was a forerunner of the growth theories subsequently developed by Evsey Domar (1946) and Paul Romer (1990), which assume a constant capital coefficient, that is, a constant ratio of capital and output. By using numerical calculations, Marx showed that growth is not generated by consumption but, to the contrary, by forgoing consumption, that is, by saving and accumulating capital. The higher the share of national income that is not consumed but is saved and invested, the higher an economy's growth rate.

Based on Marxist growth theory, the Soviet Union attempted to develop a strategy to outstrip the West in the post-war years. Its failure to do so was primarily because the savings rate and growth rate are proportional, as argued by Marx, only if there is a sufficiently large

industrial reserve army of unemployed to ensure that there is still room for growth in the number of workers proportional to the capital deployed. As soon as capital starts to grow faster than the potential labour input, and production plants are not simply proportionally enlarged, but capital is forced to apply labour-saving processes, the growth effect generated by an accumulation of capital is weakened and the Marxist formula only applies in a modified form.

Marx (1894) himself recognised this problem and provided a detailed analysis of it in the third volume of *Das Kapital*, which was posthumously edited and published by Engels. By the method of decreasing abstraction, he saw the growth model of the second volume as merely an intermediate conceptual step towards a more realistic description of the growth process, which is characterised by increasingly capital-intensive production. In this context, he talks about a growing *organic composition of capital*, or an increase in the ratio between fixed and variable capital. In todays terms, one would speak of an increase in the ratio of capital to labour.[2]

5. The role of demand

Marx, meanwhile, was less interested in the conditions for growth than in the causes of crises. Although it is true that growth can only result from savings and investment, the role of consumption as a key component of aggregate demand is also important. Downturns in consumption, as Marx (1894) correctly recognised, can lead to under-consumption crises that can suck economies into a downward spiral. In this respect Marx paved the way for the demand-based economic theory subsequently developed by John Maynard Keynes (1936) that has frequently been used in recent years to highlight the negative economic impact of a supposed austerity policy in southern Europe.

However, it is a misinterpretation of both Marx and Keynes to claim that they say demand is particularly driven by consumption and mass purchasing power. Both naturally know and emphasise that demand on the part of companies for the capital goods that they accumulate is an essential component of aggregate demand, which can also lead to critical disruptions in economic activity if interrupted. As a result, Marx repeatedly highlights the importance of demand relations between companies for economic activity. Many left-wingers misunderstand Marx in this respect.

Today demand for capital goods is seen as almost more important to the economy than demand for consumer goods, because it is subject to far stronger fluctuations over time. Investments are seen as *cycle makers*.

6. The theory of the falling rate of profit

Marx's crisis theories most definitely constitute his most important contributions to the development of economics. Alongside and preceding the under-consumption theory, his 'law of the tendency of the rate of profit to fall', which is developed in the third volume of *Das Kapital*, is of special importance. Marx (1894) believes that the rate of profit, which we now refer to as the rate of return on capital, follows a declining trend because, as already mentioned, the organic composition of capital rises, or capital accumulates faster than the labour force can grow. In his texts Marx himself revealed his highly mechanistic view of this law, rejecting the idea that any capital accumulation exceeding labour growth might result in additional output increases. In this regard, modern theory is much more optimistic, stressing the role of labour-saving technological progress. Capital accumulation without a proportional increase in labour nevertheless means that production cannot grow in proportion to capital, because successively less profitable production processes must be employed. Much later Robert Solow (1956) captured this concept more precisely in the form of a formal growth model. Economists now talk of real investment options being exhausted, or technically of the falling marginal productivity of capital.

Marx forecast that the falling rate of profit would at some time reach a point at which profits would be too low for entrepreneurs to dare make fresh investments. At this point there would be an investment strike that would plunge the economy into a crisis, because the lack of capital goods purchases would also cause the producers of such goods to buy fewer intermediate goods, thus triggering a far-reaching chain reaction in all economic sectors. The law of the falling rate of profit therefore links the theory of growth accompanied by an increase in the organic composition of capital with the theory of insufficient demand, making it a theory of endogenous crisis in the capitalist system.

This did not convince all of those on the Left. Rosa Luxemburg (1913, 1921), for example, did not think much of the law of the falling rate of profit. She considered the under-consumption theory to be far more important and sarcastically remarked that the tendency of the rate of profit to fall is about as likely to bring down capitalism as the sun is to stop shining (Luxemburg 1921, p. 411, footnote). Luxemburg instead advocated the theory of capitalist imperialism. In her view, capitalism suffers from a chronic demand deficit because it always produces more that workers can consume. That is why the capitalist system needs to acquire new markets in order to sell surplus goods there. However, since the world is not infinitely large, there is a foreseeable end to this strategy. From an economic point of view, this is all

fairly absurd nonsense, since it overlooks the fact that any form of production generates exactly the amount of income required to buy it. A market economy by no means needs growing external demand to secure its existence. This fact was recognised by Jean-Baptiste Say (1803) long before Marx.

This does not mean that the world's finite nature is not a problem. The real barriers to production lie in the fact that the earth's natural resources are finite, as is the capacity of the planet and its atmosphere to absorb the waste generated by industrial production. This, however, has nothing whatsoever to do with Rosa Luxemburg's finite concept of demand.

7. Secular stagnation

While Luxemburg's observation that the tendency of the rate of profit to fall will only proceed very slowly, if at all, is correct, it is all the more striking that today, 150 years after Marx, clear signs of a long-term fall in returns on capital are emerging. Interest rates have been hovering at around zero since 2015, and parts of the world, such as southern and western Europe, as well as Japan, seem to be in the grip of a never-ending crisis.

Eminent economists such as Carl Christian von Weizsäcker (2014) from Bonn or Lawrence Summers (2014a), the former US Finance Minister, interpret the falling interest rates and the long-running crisis that has afflicted the Western world since 2008 as *secular stagnation*.[3] This term was first coined back in the 1930s by Alvin Hansen (1938, 1939), a contemporary of Keynes, who presumably was also under the influence of Marx. According to the theory of secular stagnation, humanity will at some stage have exhausted its investment possibilities, so that the profitability of the remaining investment projects is no longer sufficient to bear even a zero rate of interest. Since it is hard for interest rates to fall below zero in a monetary economy, the investment strike threatens to turn into an eternal economic decline, if not a lasting crisis.[4]

This is all very similar to the theory of the falling rate of profit as developed by Marx, except that modern authors do not ask for a change in the system, but call for a government budgetary policy that stimulates demand. If demand for private capital goods is not high enough, the state should step into the breach with credit-financed government expenditure to compensate for the lack of investment demand. Von Weizsäcker argues that a pay-as-you-go pension system, which can be shown to be a form of hidden government debt, as well as other shadow budgets that can be used to bypass the European Union's debt ceilings, can usefully boost demand. Consumption by future generations is cut in favour of present generations,

which could in von Weizsäcker's opinion offset the current lack of demand. Summers recommends the negotiation or abolition of legal debt brakes.

The theory of secular stagnation has proved controversial. The Swiss-American economist Jürg Niehans (1966) and the German Stefan Homburg (1991, 1992, 2014) have both pointed out that there can hardly be a demand deficit at a zero interest rate because investors put their money into land and property from which they can expect a long-term lease. The flight into tangible assets would massively boost land prices, theoretically even immeasurably. This would make people very rich and encourage them to buy high volumes of consumer goods, ruling out the idea of a demand deficit at zero interest rates despite weak investment. In view of the German construction boom, which was also triggered by the low interest rates seen in recent years, this seems like a fairly plausible theory.

8. Cash and the falling profit rate

Other economists like, for example, Kenneth Rogoff (2014, 2015, 2016), take the threat of secular stagnation more seriously and demand the abolition of cash to make interest rates so negative that new investments become profitable again. Without a restriction on cash holdings, the interest rate in a monetary economy cannot turn negative, or can do so only to a degree that reflects the costs of storing cash in safes, for nobody would lend money to anyone else at negative interest rates if he or she can keep hold of it more cheaply.

This position has proven particularly popular at the European Central Bank (ECB), perhaps because the ECB wishes to revive the economy, or maybe because, contrary to its mandate, it aims at bailing-out over-indebted banks and firms in southern Europe. The ECB Council has already imposed a negative interest rate on deposits that commercial banks make with their national central bank, and has thus made the interest rates in the interbank market turn negative, too. It would ideally like to take this policy even further; but the problem is cash. Thanks to the existence of cash, interest rates can be made negative only up to the cost of hoarding cash physically in safes, because savers would rather keep their money than lend it if negative interest rates exceed the costs of safes. In a monetary economy hoarding costs are therefore the limit up to which the central bank can make the interest rate negative.

The negative interest rate already seems to have reached its limit. Large investors like banks and insurance funds have the opportunity to hold cash at relatively low costs per euro and are physically hoarding huge stocks of cash to escape negative rates. A German individual bank has admitted to the author, off the record, to holding well over 10bn euros in 500 euro notes in huge storage facilities. Nikolaus von Bomhard, the outgoing chairman of

Munich Re, the world's biggest reinsurance company, even publicly announced in a speech in 2016 that the company is holding large cash reserves to avoid paying negative interest rates (see Bloomberg 2016). Demand for cash from banks and institutional buyers has now grown so large that they are renting former Swiss mines as cash storage facilities.

Such avoidance tactics are a thorn in the side of the ECB Council and face fierce opposition. To make hoarding in safes more difficult, the Council decided gradually to withdraw 500 euro bank notes from circulation. This is forcing cash owners to store 200 euro banknotes instead. Since this makes storing money in safes around two and a half times as expensive, it gives the ECB slightly more leeway with negative interest rates. Should this prove insufficient, the ECB can abolish the 200 euro banknotes, too, and force cash holders to store 100 euro bank notes, which would double money hoarding costs. There is even a real possibility that cash may be abolished entirely to remove all barriers to negative interest rates.

The fact that the ECB's communications department maintains that these moves are part of the fight against petty crime has no bearing, since the ECB often uses convenient post-truths to spare itself the bother of explaining its complex thought processes to the superficial, short-attention-span world of internet and television media.

9. Devaluation and creative destruction

Although the Marxist theory of the tendency of the rate of profit to fall has assumed a new importance with the ECB's zero and negative interest rate policy, it would be unreasonable to apply it to ECB policy, for two reasons: first, because Marx never talked about monetary policy; and second, because he only talked about the *tendency* of the profit rate to fall. He did so because he saw counteracting forces continuously at work that can temporarily interrupt and stop the fall in profit rates. His theory of the devaluation of capital is of special significance in this context.

By 'devaluation' Marx primarily means a continuing relative devaluation in relation to the value of labour, which arises as a result of technological progress; in other words, productivity-driven wage growth. In addition, however, he repeatedly talks about the crisis-related devaluation of capital. The devaluation of capital automatically drives the profit rate back up, because it lowers the denominator on the profit/capital ratio and because it paves the way for technical progress in the form of newer, more innovative companies that rise from the ashes of old, bankrupt companies, by enabling them to purchase the latter's machinery and buildings very cheaply via liquidation proceedings. The profitability of capital is thus restored via the destruction of old capital.

This view of events was subsequently elaborated by the Austrian economist Joseph Schumpeter (1912, 1943), who published his *Theorie der wirtschaftlichen Entwicklung* before World War I and much later, during World War II, wrote his related book *Capitalism, Socialism and Democracy* in the USA, subsequently retranslated into German. Schumpeter coined the expression *creative destruction* to describe the fresh start by businesses building on the ruins of older industries.

These are extremely important relations that were further developed in the modern theory of economic bubbles. A bubble mostly arises as a result of easy access to credit, which enables excessive investments. Such bubbles tend to develop primarily, but not exclusively, in real estate investment, which absorbs large amounts of capital. Five-sixths of the capital stock of a developed economy like that of Germany' consists of real estate, and only one fifth consists of equipment capital in the sense of machinery and plants. Investments drive up the prices of old stocks of real estate and stimulate the construction sector, which, in turn, increases employment and wages. The story is similar in the rest of the economy, as shown by rising share prices and falling ratios of earnings and share prices, which ultimately reflect falling rates of profit.

Rising wages mean additional demand for local services and goods, which relay this demand stimulus to the rest of the economy, triggering more widespread wage increases. Overall increases in income encourage people to invest even more money in real estate. In view of soaring property prices, they believe that such investments will pay off, which in turn means that the bubble continues to grow. This leads to an upward trend in real estate prices, share prices and wages that makes everybody happy initially, but is essentially excessive and artificial, undermining an economy's competitiveness as a location for international business and creating growing difficulties for exporters. As long as the bubble continues to grow, these difficulties are covered up by the booming domestic economy, but at some point the first investors start to have misgivings. They put their foot on the brakes and, if others notice and their qualms start to spread, a negative chain reaction occurs that triggers plummeting real estate and share prices, and mass unemployment. This is the crisis that Marx and Schumpeter described so accurately.

The crisis is painful, but already contains the seeds of a fresh upturn as the prices of real estate, capital goods and shares return to a normal level. Investments once again become profitable and economic growth picks up. In this growth, however, lies the danger of fresh excesses and a new bubble if policymakers don't step on the brakes. In the ups and downs of cycles that last far longer than normal business cycles and can span one or two decades, there

are repeated waves of innovation that boost economic development and generally increase mass prosperity. In a nutshell, this is the normal development of a capitalist economy.

10. The dubious role of central banks

The creative destruction that lies at the core of any new upturn, however, is currently being prevented by central banks across the globe. These banks are keeping interest rates so low and asset values so high – via bond purchases and refinancing operations – that the bubbles cannot easily burst any longer; and if they do burst, asset values cannot return to their normal level. Zombie banks and their zombie clients from the real economy, in other words institutions that are effectively no longer competitive, are being kept alive as a result. The reduced interest rates keep the assets such institutions have in their books, ranging from government bonds to existing credit claims and real estate, attractive to investors despite more pessimistic expectations. This reduces the drop in prices, that is, the devaluation of capital during a crisis, and saves banks and other institutional asset owners from book losses. Some borderline companies even seem fairly profitable, although the actual revenues from their respective core businesses barely cover their costs. This may seem welcome in terms of saving jobs, but the zombie banks and companies survive like the living dead, doing no business while occupying the places that should be taken by young entrepreneurs with new products. This prevents a deep crisis, but the economy slips instead into a creeping decline and a lasting crisis that some economists perceive as a secular stagnation.

This was what happened to the Japanese Central Bank after it responded to the bursting of the real estate bubble with a zero-interest rate policy and began to finance escalating government debt with the printing press. Its policies failed to trigger fresh economic growth in Japan. The country has now been stagnating for quarter of a century.

A similar situation also currently prevails in southern Europe. Rapid interest rate decreases, which occurred after 1995 with the announcement that the euro would be introduced by 1999, led to inflationary economic bubbles that made southern Europe too expensive and robbed countries of their competitiveness. The bubbles burst when the Lehman crisis spread to Europe from America in 2008. Ruins of formerly functioning economies were accordingly left behind in southern Europe. The central banks of southern Europe prevented the worst by using so-called TARGET substitute credit, lending much more than their fair share of newly created central bank money to their local businesses, but by this very same process they also blocked the devaluation of capital and the creative destruction that are the preconditions for a structural transformation and new growth.

The owners of old companies and investors welcomed central bank interventions, because the credit provided by the local printing presses at a zero rate of interest saved them from dramatic asset losses. However, this is precisely the reason why no new upturn occurred. The mere tendency of the profit rate to fall turns into a downturn managed by monetary policy. The downturn looks like secular stagnation with falling profit rates, which arise as a result of the exhaustion of investment options. In fact, however, it is caused by a central bank policy oriented towards special interests, which prevents asset values from returning to their equilibrium level.

The ultra-loose monetary policy threatens to dry out capitalism and lead directly to a state-run command economy via excessive bail-out packages, since it is accompanied by central banks overstepping their mandates. Prior to the peak of the crisis, in summer 2012, the ECB had granted the crisis-afflicted countries the lion's share of public bail-out funds (83 per cent), worth a total of 1,342bn euros, without any parliamentary approval.[5] The ECB also announced that it would buy bonds worth 2,300bn euros in the private sector in the years 2015–17 with freshly printed money, of which around 80 per cent is government bonds, in brazen violation of Article 123 of the Treaty on the Functioning of the European Union. In the framework of the Outright Monetary Transactions (OMT) programme, the much-quoted 'Whatever it takes' by Mario Draghi, president of the ECB, even gave buyers of government bonds issued by crisis-afflicted countries unlimited confirmation of cover, which would have cost several billion euros annually if they had been obliged to purchase it in the market in the form of credit default swaps. With these measures the ECB is diverting international investment to locations in southern Europe, a process which is fatally reminiscent of the administration of the social production fund in the former Eastern Germany's New Economic System of Planning and Management of the Economy.

All in all, this situation is extremely worrying. The assertion by Marx that capitalism will ultimately perish because of the fall in profit rates, paving the way for socialism, may actually prove true in some respects thanks to the developments described above, albeit in a slightly different way from that which Marx imagined.

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Notes

[1] See also Samuelson's (1971) scholarly contribution to this topic.

[2] For alternative interpretations of the observation of a growing organic composition of capital see von Weizsäcker (1977) and Sinn (1975).

[3] Larry Summers (2013, 2014b) used Alvin Hansen's term 'secular stagnation' in a speech to the attendees of the IMF's Economic Forum in the end of 2013 and repeated his thesis at the 2014 annual meeting of the American Economic Association. The same interpretation with reference to Alvin Hansen's theory of secular stagnation was given by Sinn (2009).

[4] A view that cannot easily be reconciled with the observation of a declining rate of profit has been expressed by Piketty (2013), who argues that inequality in capitalism increases as the rate of profit and the growth rate of capital are permanently higher than the growth rate of the economy.

[5] For the public credit provided to the GIPSIC countries (Greece, Italy, Portugal, Spain, Ireland, Cyprus) by the European Central Bank and the national parliaments as of December 2013, see Sinn (2014, p. 271).