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Knowledge-based economy: wealth owners portfolio choices and financialisation. A wealth supply analysis²

Introduction

The present article is aimed at providing a theoretical explanation of how relevant phenomena characterising knowledge-based economy can be logically interpreted based on both the evolution of macroeconomic theory and management science. As a starting point, it is possible to emphasise that the present, knowledge-based economy phase of development can be considered a period characterised by low profitability of investment in physical capital and tangible assets (Cf. Valente, 2020a). Based on Keynesian models in which variously conceived acceleration mechanisms are at work, a fall in profitability of investments in physical capital and tangible assets can be logically expected to derive from an increase in income inequalities and a reduction in the physical capital accumulation rate and GDP growth rate, as observed in main market economies since the 1980s.

Based on those conclusions, the present work analyses financialisation, focusing in particular on the fact that, unlike typically assumed in mainstream and heterodox economic theory, physical capital is not the only asset in which wealth owners can lock their fortune. The arguments presented here allow the confirmation of the hypothesis that when assets other than physical capital³ are available,

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³ As well as other assets connected with production needs and used as productive factors as for example human capital, broadly defined knowledge, innovation, etc.

they can also form fruitful means of preserving wealth and purchasing power by wealth owners. When, as nowadays, increases in income inequalities and stagnation of economic growth occur in an economic system, the realisation of investments in physical capital and other assets more directly connected with production needs and used as productive factors can be expected to become less profitable. The profitability of assets not connected with production needs, on the other hand, can be expected to rise in either absolute or relative terms.

The primary aim of this work is then twofold. The first aim is to indicate that a relevant phenomenon of portfolio choice change can be considered to be at work on the capital – or rather wealth – supply side. The second one relates to the effects of such empirical evidence on the functioning of macroeconomic models based on economic theory. This argues that when assets other than innovation and physical and human capital exist, it is not reasonable to assume that some automatic forces stabilising the economic system will appear. In this case, it is not possible to expect that a tendency to reabsorb initial income inequality increases through higher investments in the accumulation of physical capital – or other productive factors – will autonomously appear in the economic system. As a consequence, the neoclassical automatic counterbalancing mechanisms interlinking higher income inequalities with higher physical capital and human capital accumulation and innovation cannot be expected to be at work. Based on a mix of both primary and secondary data analysis, as well as a critical review of world literature, the current conceptual paper confirms that phenomena connected with financialisation affect the relative profitability of different assets on the supply side in main market economies taken into account. This moreover excludes both in theory and practice the emergence of the counterbalancing mechanisms which are normally assumed to be at work according to mainstream economic theory.

The present work clears the way for a more refined analysis of the mechanisms lying behind both the increased relevance of knowledge, human capital, innovation and the current lower profitability of investments in physical capital. Although introductory, the conclusions of the present study seem to the author to be particularly fruitful and useful for further refinements of studies involving the knowledge-based economy.

LOW PROFITABILITY OF PHYSICAL CAPITAL ACCUMULATION AND RISING WEALTH TO INCOME RATIO

In earlier studies (Valente, 2016a; 2020a) based on Piketty (2014a), it was pointed out that a very relevant feature of the evolution of modern economies is that, as shown in Figure 1, higher income inequalities, lower economic growth and physical capital accumulation rates have appeared in all major market economies since the 1980s. Those trends can be, moreover, interpreted as a sign of lower

profitability of investments in physical capital (Valente, 2020a) in comparison to the former industrial or golden era phase of development of market economies during the period from the 1950s to the 1970s (Cf. i.e. Piketty, 2014a; 2014b; 2014c; Kunkel, 2014; Mikuła, 2006). The affirmation of the phases of development characterized by:

- higher physical capital profitability, lower income inequalities, higher economic growth rate and higher physical capital accumulation in the period from the 1950s to the 1970s,
- lower physical capital profitability, higher income inequalities, lower physical capital accumulation and lower economic growth, as during the current knowledge-based economy phase,

could be explained based on Keynesian and Classical-Keynesian theory (Valente, 2020a).

According to the author and other scholars (Galbraith, 2014; Homburg, 2014; Kunkel, 2014), although significant in highlighting the problem and providing data on which the present study is based upon, the analysis proposed by Piketty (2014a) fails to integrate those trends with the knowledge-based literature (i.e. Godin, 2006; Jabłoński, 2012; Kelly, 2001; Mikuła, 2006; Pietruszka-Ortyl, 2006) and mainstream endogenous growth theory (Aghion, Howitt, 1992; Galor, Moav, 2004; Lucas, 1988; 2004; Mankiw, Romer, Weil, 1992; Romer, 1986; 1994; Sala-i-Martin, 1990a; 1990b).

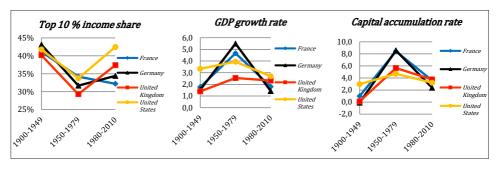


Figure 1. Relevant macroeconomic trends

Source: own work on the basis of Piketty (2014a) and Maddison project datasets (Valente, 2016a).

As well as the trends presented in Figure 1, however, a step increase in the wealth to income ratio similar to income inequalities variation has been observed since the 1980s (Cf. Figure 2 and Piketty, 2014a).

A careful consideration of this increase in wealth to income ratio can provide, according to the author, a sound base to understand the reasons lying behind the emergence of financialisation in modern economies. It also provides some suggestive fundaments upon which to base a more refined analysis of income distribution, economic growth and profitability of investment in different kinds of assets inter-linkages. It allows, as a matter of fact, the integration of the Piketty analysis

with the knowledge-based economy literature and with mainstream and heterodox theory considerations, concerning income inequalities and their linkages with productive factors accumulation and economic growth. In the next section it seems worthwhile discussing in more detail the trends presented in Figure 2.

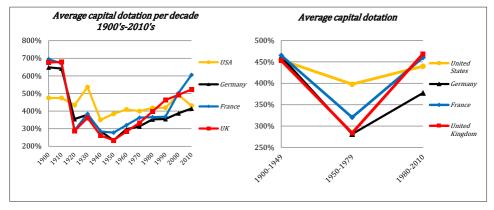


Figure 2. "Capital" or wealth to income ratio

Source: own work on the basis of Piketty (2014a) datasets (Cf. Valente, 2016a).

WEALTH TO INCOME RATIO AND DIFFERENT KINDS OF ASSETS AVAILABLE IN AN ECONOMIC SYSTEM

Although Piketty (2014a) refers to these trends as 'increases in the capital to income ratio', and notwithstanding the relevant controversies concerning the physical capital definition present in economic theory, which also affect his work (Galbraith, 2014), the composition of capital, as per the Piketty formulation, is somewhat far from the typical definition of capital adopted in economics. It is instead closer to the concept of wealth as traditionally defined in economic theory. Capital according to Piketty (2014a) is, as can be easily observed in Figure 3, composed by the financial value of assets plus the market value of housing and agricultural land.

While at first glance seemingly troublesome (Galbraith, 2014; Homburg, 2014), the definition adopted by Piketty (2014a) is, however, really useful in linking Keynesian and Classical theory-based considerations concerning physical capital accumulation and its links with economic growth and income distribution, as well as the phenomena of financialisation and mainstream endogenous growth theory considerations concerning innovation, knowledge and human capital.

As already stressed by some (Homburg, 2014; Galbraith, 2014), the decomposition of Piketty's (2014a) wealth to income ratios tends to support the conclusion that high income inequalities periods (1900s–1940s and since the 1980s) are characterised, respectively, by high land to income and high housing to

income values (Homburg, 2014). The statement that capital is back⁴, as presented by Piketty (2014a), can then be considered misleading and must be rejected (Homburg, 2014; Galbraith, 2014).

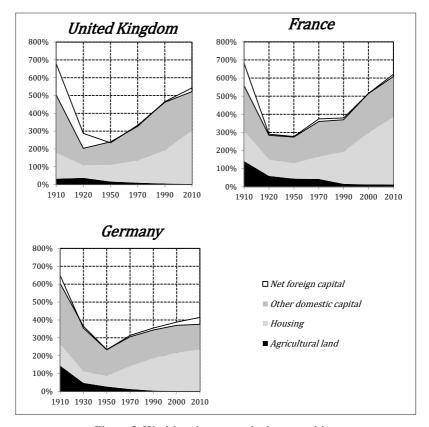


Figure 3. Wealth to income ratio decomposition

Source: own work on the basis of Piketty (2014a) datasets.

To the contrary, it is possible to suggest that the financial value of assets, which can be loosely reconnected to physical capital, was stable between 200 and 300% of income value for the most part of the period taken into account – e.g. the whole of the 20th and 21st centuries. These data tend to support the idea that, as per the results of the Cambridge capital controversies, the financial value of capital does not necessarily univocally correlate with lower or higher availability of physical capital in terms of the amount of machine, plant, equipment or productive capacity (Galbraith, 2014)⁵.

⁴ Considered both in the physical form of plant and machinery or in terms of the financial value of these kinds of assets.

⁵ This seems even more true if the unreported data in Figure 3 about the United States are taken into account. As any economist well acquainted with economic history would assume, it follows

Secondly, as per Piketty's (2014a; 2014b; 2014c) arguments and in contradiction to the assumption prevalent in most of economic theory according to which economic system functioning can be simplified to a scenario in which different kinds of assets available can be left aside to focus just on physical capital, the availability of other assets composing wealth can be relevant in maintaining and further deepening the disparities in the distribution of wealth and income. Based on the correct appreciation of the Cambridge capital controversy, according to the author, it is possible to emphasise that from Piketty's (2014a) data it logically derives that wealth owners are not interested in the form that their wealth takes (Piketty, 2014a; Garegnani, 2011; 2012; Galbraith, 2014). For them, any kind of asset is profitable and worth investing in until it continues to generate a positive amount of interest, profit or capital gain and ensures them the possibility of transferring to themselves or their heirs the actually possessed wealth and the currently saved income they add to it (Piketty, 2014a; 2014b; 2014c; Garegnani, 2011). Taking into account both the considerations of economists, surely better acquainted than Piketty with the Cambridge capital controversy, 6 and the different roles played by wealth owners and entrepreneurs in an economic system, it seems possible to suggest that, in opposition to that assumed in mainstream neoclassical theory (Solow, 1956; Sala-i-Martin, 1990a; 1990b), a rise in income inequalities and an increase in the availability of savings do not necessarily imply an increase in physical capital accumulation.

If other assets exist, then increases in wealth and savings can, as a matter of fact, be reabsorbed partially or totally by an increase in the value of assets other than machines, equipment and durable goods employed by enterprises in the production of goods and services. Such an eventuality (which seems, to the author, to describe the situation actually taking place since the 1980s based on the data) leads then to the possibility that an increase in income inequalities, and an increase in the amount of the savings it supports, can very well generate an increase in the value of assets not directly employed in production, in comparison to the value of durable goods available at the company level or to the total value of companies operating within an economic system.

THEORETICAL IMPLICATIONS OF THE AVAILABILITY OF DIFFERENT KINDS OF ASSETS IN AN ECONOMIC SYSTEM

When considering the theoretical implications of the data under analysis, the availability of different kinds of assets seems to loosen even further the

from the data that the market value of firms operating in a country rose in comparison to income exactly in coincidence with the emergence of speculative phenomena on stock market as those registered before the 1929 and 2008 crises.

⁶ Cf. (Garegnani, 1966; 1978; 1979; 2012; Han, Schefold, 2006; Harcourt, 1972; Pasinetti, Scazzieri, 2008) with the incorrect summing up of the capital controversy presented by Piketty (2014a) and the correct restatement of the matter by Galbraith (2014).

linkage, so important in mainstream theoretical elaboration⁷, between the supply of savings or capital supply, on the one hand, and investment demand and physical capital demand, on the other. This constitutes an additional argument supporting the independence of the investment decisions taken at the company level and physical capital accumulation at the aggregate level, from the amount of monetary funds available in the form of savings or capital supply in the economy. This can, moreover, be considered an additional argument confirming the appearance of acceleration mechanisms, which can be argued to have been at work during the whole of the 20th and 21st centuries, based on the data presented in Figure 1 (Valente, 2020a). If a relevant part of the savings and wealth is allotted to assets other than physical capital, it is indeed perfectly possible to raise capital accumulation even when the savings or wealth to income value are decreasing or remaining stable. Raising physical capital accumulation would, as a matter of fact, require just a reduction in the wealth owners' investments in assets other than capital. Moving funds from one asset to another allows the financing of additional capital accumulation and investments without necessarily requiring an increase in total savings. At the same time, an increase in savings or accumulated wealth does not necessarily imply an increase in physical capital accumulation. These additional amounts of savings or wealth can be invested in completely different assets, such as those not generating any increase in physical capital accumulation.

The independence of investments and capital accumulation from savings and capital – or more properly wealth – supply is moreover in accordance with other theoretical arguments supporting the same result, such as those:

- presented by Keynes (1936) in his discussion of the paradox of thrift,
- supporting long run acceleration mechanisms and path-dependency in post-Keynesian literature (Bhaduri, Marglin, 1990; Garegnani, 1962; 1983; 1992; 2011; Kalecki, 1974; 2013a; 2013b; Keynes, 1936; Onran, Stockhammer, 2001a; 2001b; Lavoie, Stockhammer, 2013; Petri, 2003; 2013; 2015; Valente, 2019a),
- provided by authors critical of mainstream theory during the Cambridge capital controversy, supporting the idea that physical capital availability in terms of productive capacity or whatever physical amounts of machines and equipment (e.g. vectorial term) and the financial value of the very same capital assets (i.e. its scalar measure) do not univocally correlate (Cohen, Harcourt, 2003; Garegnani, 1966; 1978; 1979; 2012; Han, Schefold, 2006; Harcourt, 1972; Pasinetti, Scazzieri, 2008; Samuelson, 1966; 1983; Sraffa, 1960; Valente, 2014).

⁷ Cf. (Galor, Moav, 2004; Lucas, 1988; 2004; Mankiw, Romer, Weil, 1992; Romer, 1986; 1994; Solow, 1956; Sala-i-Martin, 1990a; 1990b) with the critical considerations presented in (Petri, 2003; 2013; 2015; Setterfield, 2014; Valente, 2016a; 2016b).

The availability of assets that differ from physical capital in which wealth owners can lock their wealth weakens⁸ the mainstream idea that the increased availability of savings or wealth – normally labelled as capital – supply will lower interest rate, and through that incentivise an increased accumulation of capital in real terms on the demand side due to an easier and cheaper availability of funds to finance investments. In reality, other assets exist in an economic system, and wealth owners are not necessarily forced to lend their funds to entrepreneurs interested in borrowing them at a lower interest rate, to realise decreasingly profitable investments in productive capacity expansion as per both neoclassical theory of the decreasing marginal productivity of the factors employed in production (Cf. Eatwell, 1987; Samuelson, 1966) and Keynes's (1936) schedule of marginal efficiency of capital. They can, instead, lock their wealth in other kinds of assets. It is perfectly possible for them to increase the funds allotted to:

- financing human capital accumulation, which is comparable to investments in equipment and machinery, at least if some kind of link between normal profits someone can expected to achieve investing in physical capital accumulation, and the profits in the form of higher wages in comparison to the ones an unqualified worker can expect to earn during his working life a person needs to be convinced that they can achieve thanks to the time and the income which he/she dedicates, both directly and indirectly, to the improvement of his/her qualifications (Smith, 1776);
- funding research and development as well as innovation-connected activities,
 allowing companies to introduce new methods of production or to develop new
 or significantly improved goods and services;
- investing in assets whose value is less closely connected with any actual need of production, giving rise, in most cases, to their appreciation and eventually to speculative processes.⁹

⁸ As a matter of fact, the mechanisms discussed in the paper will also cause the loosening of counterbalancing mechanisms, which can be expected to be at work according to Keynesian and Classical theory. Although such implications will be discussed in other papers and left temporarily aside for the sake of space, according to the author this explains how, under a regime of increased income inequalities, stagnation in economic growth and physical capital accumulation - as occurred in 1900-1940 and the ongoing one started in the 1980s - can be sustainable for long periods of time, without harmful consequences for wealth owners. The availability of other assets does not, indeed, undermine just the more optimistic neoclassical point of view discussed in the main text, but undermines the pessimistic idea that the lower aggregate demand (though lower economic growth and less profitable capital accumulation) will compromise sooner or later the wealth owners' own source of income. On the basis of the data, the author considers this mechanism to be not necessarily at work. Wealth owners can, indeed, continue to achieve high incomes based on sources different than the financing of stagnating and less profitable physical capital - or other production needs-connected assets. A lack of interventions supporting a rise of more production-oriented assets profitability or a reorientation of portfolio choices toward them will, however, still have negative effects on the economic system as a whole, leading, as at present, to lower economic growth, higher instability and more frequent demand driven crises.

⁹ Cf. considerations about land and housing prices in later parts of the main text.

Moreover, choosing other assets as an alternative to physical capital can be considered even more profitable from the point of view of wealth owners, if acceleration mechanisms are at work in the economic system as per Keynesian literature (Bhaduri, Marglin, 1990; Garegnani, 1962; 1983; Kalecki, 1974; 2013a; 2013b; Keynes, 1936; Lavoie, Stockhammer, 2013; Onran, Stockhammer, 2001a; 2001b). Based on this, it is possible to expect that the negative effects caused by rises in inequalities in income distribution, which will decrease the propensity to consume, employment, wages and aggregate demand, both in the short and the long run, will also generate a fall in physical capital accumulation profitability. As a result of income inequality increases, the demand for both physical capital and investment by firms will reduce, while the risk connected with the realisation of whatever amount of investment in physical capital will increase. Consequently, when, as in reality, other assets are available in the economy, then the wealth owners will judge lending their funds to subjects engaged in physical capital accumulation less profitable. In these cases it will be more reasonable for them to invest their wealth in other assets instead. Income inequality increases cannot, then, be expected to cause an increase of investment in physical capital and a reduction in the interest rate which savers and wealth owners perceive when lending their funds to companies, which would result in less profitable and more risky investments in productive capacity expansion. The increases in either income distribution inequalities or wealth to income ratio will be more likely to lead to changes in the allocation of wealth and the reorientation of portfolio choices away from physical capital and toward other assets, in accordance with what seems to emerge from the data in Figure 3 and Figure 4^{10} .

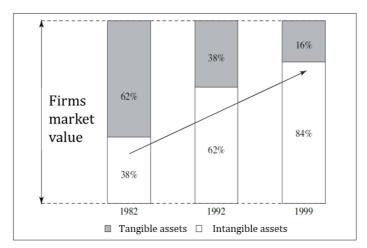


Figure 4. Role of tangible and intangible assets in determination of companies market value Source: author data based on (Pietruszka-Ortyl, 2006, Figure 3, p. 95).

¹⁰ The market value of companies presented in Figure 4 can be roughly considered a further decomposition of *Other domestic capital* category presented in Figure 3.

While more detailed argumentation is needed in the case of human capital accumulation and innovation, which will be for the most part postponed to other papers, ¹¹ the availability of housing and land provides a convincing argument to negate or at least encourage a serious questioning of the neoclassical assumption according to which autonomous forces reabsorbing the initial changes in income distribution and contrasting them will always appear.

As was strikingly evident in the case of the skyrocketing value of agricultural land to income ratio at the start of the 20th century, and to a lesser degree in the case of the rising value of housing to income ratio since the 1980s, if some assets alternative to physical capital are available in the economy and prone to appreciation without any direct connection to any production need in the economy (Cf. Galbraith, 2014; Homburg, 2014), then speculation will occur, being possible for the wealth owners to affect the value of both those assets and, eventually, the value of their own incomes and wealth. In considering the data, it seems obvious that the high land to income ratio experienced in the period from 1900s until the start of the 1950s has no justification in terms of increases in the quantities of land to income (Homburg, 2014). The quantity of agricultural land available in a given country is, indeed, for the most part fixed in amount. Similarly, relying just on the appearance of an unprecedented urbanisation process, which can be assumed to have been taking place in an unexpected and constant magnitude since the 1980s in such developed countries as the United States, the United Kingdom, France and Germany, does not appear to be a plausible explanation to justify the step increase in housing value registered in those countries in the same period. The appearance of housing appreciation, their quantity being almost stable in comparison to income, is then the most likely reason for the emergence of those data. It can be thus considered to be a case of financialisation and speculation, leading to significant increases in the unitary price of such an asset type (Galbraith, 2014; Homburg, 2014). This feature of the present phase of economic system evolution can thus be considered very relevant. Both the theoretic possibility that such phenomena can take place, and their actual occurrence in the present major market economies seem to the author worthy of consideration. Those phenomena can, as a matter of fact, help explain the evolution of income inequalities during the whole 20th and 21st centuries, provide a linkage between the different models available to explain the knowledge-based economy phenomena and allow the integration of the differ-

¹¹ It seems worth pointing out that when aggregate demand and economic growth rate are lower and more unstable, a decrease in the profitability of physical capital accumulation will be registered, while more flexible human capital and innovation-oriented investment projects will become more attractive (Cf. Valente, 2020a; 2020b). Changes in fund allocations emerging from Figure 4, are, moreover, paralleled by changes in management strategies, which support a reorientation from physical capital toward human capital and innovation (Valente, 2020b). Investment decisions by entrepreneurs connected with wealth demand will thus partially reinforce the supply side mechanisms considered in this paper.

ent points of view concerning the phase of development of the modern economic system, which are available in the literature (Cf. Valente, 2020a).

CONCLUSIONS

The presented data and theoretical considerations primarily negate the idea that the more uneven income distribution is, and the higher the availability of savings or capital supply is, the greater will be the amount of investment and physical capital accumulation occurring in any given economic system. It is, furthermore, possible to exclude the idea that a more uneven income distribution and increased wealth and savings supply will lead to the appearance of lower interest rates perceived by wealth owners lending their funds to companies, and, similarly, it is unreasonable to expect that they will generate a fall in the profit rates attainable by entrepreneurs actually realising investments in physical capital accumulation. If instead of lending their increased wealth and savings at lower interest, wealth owners could allocate them to other sectors and invest them in other assets, as currently seems to be happening, then no automatic mechanism counterbalancing the initial inequalities in income distribution can be reasonably assumed to be at work, even in the very long run. This is, indeed, at odds with the appearance of any such kind of mechanism, to the contrary of what mainstream theory assumes both in its exogenous as well as in endogenous growth model versions.

Secondly – similarly to the independence of the investment decisions originally stressed by Keynes (1936) in the case of enterprises realising investments in physical capital – it seems logical to assume, based on the presented trends and considerations, that nobody in a free-market economy can force a saver or wealth owner to finance physical capital accumulation if other assets are at the same time available and profitable. This statement can, moreover, be considered even more true, if, as can be argued to happen under mainstream and Keynesian theoretic argumentation (Cf. i.e. Keynes, 1936; Garegnani, 1962; 1983; Kalecki, 1974; 2013a; 2013b; Lavoie, Stockhammer, 2013; Onran, Stockhammer, 2001a; 2001b; Galor, Moav, 2004; Lucas, 1988; Mankiw, Romer, Weil, 1992; Sala-i-Martin, 1990a; 1990b; Solow, 1956), an increase in funds allotted to physical capital accumulation also implies lower interest and/or higher risk for a wealth owner, decreasing investment profitability, increasing its riskiness or leading to both outcomes at once.

Thirdly, those mechanisms leading to portfolio choice changes have in all evidence to be taken into account. They can be, as a matter of fact, considered as a sound base to interlink different phenomena characteristic for the present phase of development of modern market economies. Together with the already provided analysis of data supporting the consideration of knowledge-based economy as a phase of development of modern economies characterised by low profitability

of investment in physical capital, high income inequalities, lower physical capital accumulation and lower economic growth rates (Valente, 2016a; 2020a), the present study provides some reasons to justify the persistence of such a regime of growth even over very long periods of time. Without taking into account portfolio choice changes and the existence of different assets, the long run affirmation of such a regime would have been unexplainable. It is worth emphasising that to improve the understanding of modern economic systems, it is crucial to include in the theoretical models those assets not directly connected with production needs, adding them to the physical capital and any number of other assets connected with production needs. Traditional models, not including assets not used as productive factors, would have supported the necessary appearance of tendencies reverting income inequalities increases and reductions in the profitability of assets used as production means, which we are not experiencing in modern economies in practice. In those models, a decrease in interest rate and profits would have negatively affected the wealth owner's patrimony, putting autonomously under check any further rise of inequalities in the distribution of wealth and income. The availability of assets prone to appreciation and not connected with production needs, on the other hand, leads to the conclusion that such mechanisms would not necessarily appear. This can then explain how economies today can be facing a situation where the total wealth supply is constantly rising, while the accumulation of physical capital on the demand side is stagnating at the same time.

It is worth noting that together with the demand side effects on the entrepreneur's willingness to invest in different production needs linked assets, this leads to the conclusion that, in opposition to what is assumed from the knowledge-based economy point of view (Cf. Valente, 2020a), no other need arises for the development of completely new theoretical models in order to interpret knowledge-based economy. A careful integration of Keynesian and Classical theorists' considerations with some of the arguments available in mainstream endogenous growth theory (Valente, 2016b) and the study of historical evolution of management methods through the 20th and 21st centuries (Valente, 2018; 2019b; 2020b) seem, instead, the most fruitful directions for present research and the most profitable road to further refinement of the author's analysis of the knowledge-based economy phenomena.

BIBLIOGRAPHY

Aghion, P., Howitt, P. (1992). A Model of Growth through Creative Destruction. *Econometrica*, 60(2), 323–351. DOI: 10.2307/2951599.

Bhaduri, A., Marglin, S. (1990). Unemployment and the real wage: the economic basis for contesting political ideologies. *Cambridge Journal of Economics*, 14(4), 375–393. DOI: 10.1093/oxfordjournals.cje.a035141.

- Cohen, A. J., Harcourt, G. C. (2003). Retrospectives: Whatever happened to the Cambridge capital theory controversies? *Journal of Economic Perspectives*, 17(1), 199–214. DOI: 10.1257/089533003321165010.
- Eatwell, J. (1987). Marginal efficiency of capital. In: J. Eatwell, M. Milgate, P. Newman (Eds.), The *New Palgrave: A Dictionary of Economics, First Edition*. London: Palgrave Macmillan.
- Galbraith, J. K. (2014). Capital for the Twenty-First Century? *Dissent*, *61*(2), 77–82. DOI: 10.1353/dss.2014.0032.
- Garegnani, P. (1962). Il problema della domanda effettiva nello sviluppo economico italiano. Rome: Svimez.
- Garegnani, P. (1966). Switching of Techniques. *Quarterly Journal of Economics*, LXXX(4), 554–567.
- Garegnani, P. (1978). Notes on consumption, investment and effective demand: I. *Cambridge Journal of Economics*, 2(4), 335–353. DOI: 10.1093/oxfordjournals.cje. a035398.
- Garegnani, P. (1979). Notes on consumption, investment and effective demand: II. *Cambridge Journal of Economics*, *3*(1), 63–82. DOI: 10.1093/oxfordjournals.cje.a035409.
- Garegnani, P. (1983). Two Routes to Effective Demand: Comment on Kregel. In: J. A. Kregel (Ed.), *Distribution, Effective Demand and International Economic Relations* (pp. 69–80). London: Macmillan.
- Garegnani, P. (1992). Some notes for an analysis of accumulation. In: E. J. Nell, J. Halevi, D. Laibman (Eds.), *Beyond the steady state: a revival of growth theory* (pp. 47–71). London: Macmillan. DOI: 10.1007/978-1-349-10950-0 3.
- Garegnani, P. (2011). Capital in the Neoclassical Theory. Some Notes. *Nómadas. Revista Crítica de Ciencias Sociales y Jurídicas*, *MA/2011.1*, 45–62.
- Garegnani, P. (2012). On the present state of the capital controversy. *Cambridge Journal of Economics*, 36(6), 1417–1432. DOI: 10.1093/cje/bes063.
- Galor, O., Moav, O. (2004). From physical to human capital accumulation: Inequality and the process of development. *The Review of Economic Studies*, 71(4), 1001–1026. DOI: 10.1111/0034-6527.00312.
- Godin, B. (2006). The knowledge-based economy: conceptual framework or buzzword? *The Journal of Technology Transfer, 31*(1), 17–30. DOI: 10.1007/s10961-005-5010-x.
- Han, Z., Schefold, B. (2006). An empirical investigation of paradoxes: reswitching and reverse capital deepening in capital theory. *Cambridge Journal of Economics*, 30(5), 737–765. DOI:10.1093/cje/bei089.
- Harcourt, G. C. (1972). *Some Cambridge controversies in the theory of capital*. Cambridge: Cambridge University Press.
- Homburg, S. (2014). Critical Remarks on Piketty's 'Capital in the Twenty-First Century'. Institute of Public Economics, Leibniz University of Hannover. Discussion Paper No. 530.
- Jabłoński, Ł. (2012). Kapitał ludzki a konwergencja gospodarcza. Warsaw: Wydawnictwo CH Beck
- Kalecki, M. (1974). Zarys teorii wzrostu gospodarki socjalistycznej. Warsaw: PWN.
- Kalecki, M. (2013a). Theory of Economic Dynamics, an essay on cyclical and long-run changes in capitalist economy. London: Routledge.

- Kalecki, M. (2013b). Essays in the theory of economic fluctuations. London: Routledge. DOI: 10.4324/9781315016818.
- Kelly, K. (2001). Nowe reguly nowej gospodarki. Warsaw: WIG-Press.
- Keynes, J. M. (1936). *The General Theory of Employment, Interest, and Money,* electronic version, Adelaide: The University of Adelaide Library Electronic Texts Collection (2014).
- Kunkel, B. (2014). Paupers and Richlings. *London Review of Books*, 3rd July 2014 edition. Retrieved from: http://www.lrb.co.uk/v36/n13/benjamin-kunkel/paupers-and-richlings (2021.05.18).
- Lavoie, M., Stockhammer, E. (2013). Wage-led Growth: An equitable strategy for economic recovery. London: Palgrave Macmillan.
- Lucas, R. E. (1988). On the mechanics of economic development. *Journal of Monetary Economics*, 22(1), 3–42. DOI: 10.1016/0304-3932(88)90168-7.
- Lucas, R. E. (2004). The industrial revolution: Past and future. In: R. E. Lucas, *Lectures on economic growth* (pp. 109–188). Cambridge (US) and London: Harvard University Press.
- Mankiw, N. G., Romer, D., Weil, D. N. (1992). A contribution to the empirics of economic growth. *National Bureau of Economic Research*, Working Paper w3541. DOI: 10.2307/2118477.
- Mikuła, B. (2006). *Organizacje oparte na wiedzy*. Cracow: Akademia Ekonomiczna w Krakowie.
- Onaran, Ö., Stockhammer, E. (2001a). The effect of distribution on accumulation, capacity utilization and employment: testing the wage-led hypothesis for Turkey. *Istanbul Technical University, Faculty of Management Discussion Papers in Management Engineering*, 01(1), 4–34.
- Onaran, Ö., Stockhammer, E. (2001b). Two different export-oriented growth strategies under a wage-led accumulation regime: à la Turca and à la South Korea. *University of Massachusetts Amherst, Working Paper Series*, Working Paper 38.
- Pasinetti, L. L., Scazzieri, R. (2008). Capital theory (paradoxes). In: S. N. Durlauf, L. E. Blume (Eds.), *The New Palgrave Dictionary of Economics, Second Edition* (pp. 675–684). London: Palgrave Macmillan.
- Petri, F. (2003). Should the theory of endogenous growth be based on Say's Law and the full employment of resources? In: N. Salvadori (Ed.), *The Theory of Economic Growth: a 'Classical' Perspective* (pp. 139–60). Cheltenham (UK): Edward Elgar Publishing.
- Petri, F. (2013). The Inevitable Dependence of Investment on Expected Demand: Implications for Neoclassical Macroeconomics. In: E. Levrero, A. Palumbo, A. Stirati (Eds.), Sraffa and the Reconstruction of Economic Theory. Volume Two: Aggregate Demand, Policy Analysis and Growth (pp. 44–77). London: Palgrave Macmillan.
- Petri, F. (2015). Neglected implications of neoclassical capital-labour substitution for investment theory: another criticism of Say's Law. *Review of Political Economy*, 27(3), 308–340. DOI: 10.1080/09538259.2015.1067367.
- Pietruszka-Ortyl, A. (2006). Wyzwania funkcjonowania organizacji w warunkach ekonomii wiedzy. Zeszyty Naukowe Akademii Ekonomicznej w Krakowie, 715, 83–97.

- Piketty, T. (2014a). *Capital in the twenty-first century*. London: The Belknap Press of Harvard University Press. DOI: 10.4159/9780674369542.
- Piketty, T. (2014b). My Response to the Financial Times. *Huffington Post*, 29th May 2014 Edition. Retrieved from: https://www.huffpost.com/entry/response-to-financial-times b 5412853 (2019.05.07).
- Piketty, T. (2014c). Save capitalism from the capitalists by taxing wealth. *Financial Times*, 29. Retrieved from: http://piketty.pse.ens.fr/en/articles-de-presse/77 (2019.07.05).
- Romer, P. M. (1986). Increasing returns and long-run growth. *The Journal of Political Economy*, 94(5), 1002–1037. DOI: 10.1086/261420.
- Romer, P. M. (1994). The origins of endogenous growth. *The Journal of Economic Perspectives*, 8(1), 3–22. DOI: 10.1257/jep.8.1.3.
- Sala-i-Martin, X. (1990a). Lecture notes on economic growth (I): Introduction to the literature and neoclassical models. *National Bureau of Economic Research*, Working Paper w3563.
- Sala-i-Martin, X. (1990b). Lecture notes on economic growth (II): Five prototype models of endogenous growth. *National Bureau of Economic Research*, Working Paper w3564. DOI: 10.3386/w3564.
- Samuelson, P. A. (1966). A summing up. *The Quarterly Journal of Economics*, 60(4), 568–583.
- Samuelson, P. A. (1983). Durable capital inputs: Conditions for price ratios to be invariant to profit-rate changes. *Zeitschrift für Nationalökonomie*, 43(1), 1–20.
- Setterfield, M. (2014). Neoclassical Growth Theory and Heterodox Growth Theory: Opportunities For (and Obstacles To) Greater Engagement. *Eastern Economic Journal*, 40(3), 365–386. DOI: 10.1057/eej.2013.12.
- Smith, A. (1776). *An Inquiry into the Nature and Causes of the Wealth of Nations*. Losanna: Digital version Metalibri (2007). DOI:10.1093/oseo/instance.00043218.
- Solow, R. M. (1956). A Contribution to the Theory of Economic Growth. *The Quarterly Journal of Economics*, 70(1), 65–94. DOI: 10.2307/1884513.
- Sraffa, P. (1960). *Production of Commodities by Means of Commodities: Prelude to a critique of economic theory*. Cambridge: Cambridge University Press.
- Valente, R. (2014). Redystrybucja dochodu i jej skutki długo- i krótkookresowe według teorii alternatywnych do paradygmatu neoklasycznego. Próba odwrócenia tradycyjnego podejścia do nierówności społecznych. *Nierówności Społeczne a Wzrost Gospodarczy*, 39, 55–69.
- Valente, R. (2016a). 'Capital' Accumulation, Economic Growth and Income Distribution: Different Theories and 20th and 21st Century Evidence. *Nierówności Społeczne a Wzrost Gospodarczy*, 46, 148–179. DOI: 10.15584/nsawg.2016.2.8.
- Valente, R. (2016b). Mainstream and heterodox sources of endogenous growth: some linkages and the role of income distribution. *Nierówności Społeczne a Wzrost Gospodarczy*, 47, 302–321. DOI: 10.15584/nsawg.2016.3.23.
- Valente, R. (2018). The influences of a macro-environment and work and firm organization changes. An analysis of Italian productive decentralization in the 1970s. *Nauki o Zarządzaniu*, 23(4), 48–68. DOI:10.15611/ms.2018.4.07.

- Valente, R. (2019a). Analiza zróżnicowania poziomu rozwoju poszczególnych regionów i ich rynków pracy w Polsce. *Nierówności Społeczne a Wzrost Gospodarczy*, *57*, 432–455. DOI: 10.15584/nsawg.2019.1.31.
- Valente, R. (2019b). Propozycja klasyfikacji warunków opłacalności stosowania różnych metod projektowania konwencjonalnych systemów produkcji z uwzględnieniem roli lean i JIT. In: M. Gębarowski, M. Jabłoński (Eds.), *Jakość wobec wymagań współczesnego rynku/Quality as Regards the Requirements of the Contemporary Market* (pp. 135–146). Radom: Instytut Technologii Eksploatacji Państwowy Instytut Badawczy.
- Valente, R. (2020a). The knowledge-based economy: an integrated macroeconomic and management approach to the analysis of major forces affecting the evolution of modern economies. *Nierówności Społeczne a Wzrost Gospodarczy*, 62, 256–277. DOI: 10.15584/nsawg.2020.2.17.
- Valente, R. (2020b). Changes in Aggregate Macroeconomic Environment and Enterprise Management Strategy: Some Introductory Considerations on Role of Organizational Culture in Knowledge-Based Organizations. In: A. Jaki, B. Ziębicki (Eds.), Knowledge Economy Society. External and internal determinants of modern business management (pp. 15–30). Toruń: TNOiK.

Summary

Based on a data and literature analysis as well as autonomous theoretical reasoning and argumentation by the author, the present article discusses the relevance of financialisation and portfolio choice changes under the present phase of development of modern economies. Relying upon the earlier studies by the author which stress that knowledge-based economy can be characterised as a low profitability of investment in physical capital, higher income inequalities, lower physical capital and economic growth rate phase of the development of economic systems, the present work provides variously conceived arguments to support the idea that significant portfolio choice changes by wealth owners are a relevant feature of knowledge-based economy. Some of the implications of the economic theory of the availability of assets other than physical capital and other assets more connected with production needs were thus discussed, pointing out that this leads mainly to the negation of the necessary arrival of mainstream counterbalance mechanisms which support the affirmation of higher physical capital accumulation when higher income inequalities are recorded.

Keywords: Keynesian theory, income distribution, financialization, knowledge-based economy, economic growth.

Gospodarka oparta na wiedzy: decyzje portfelowe posiadaczy bogactwa i finansyzacja, analiza podaży bogactwa

Streszczenie

Na podstawie zarówno analizy danych, literatury naukowej, jak i samodzielnie opracowanej przez autora argumentacji i rozumowania teoretycznego, artykuł analizuje ważną rolę finansyzacji i zmian w doborze oraz optymalizacji portfelowej w obecnej fazie rozwoju współczesnych gospoda-

rek. W oparciu o wyniki wcześniejszych badań autora, z których wynikało, iż obecną fazę rozwoju można scharakteryzować jako okres niskiej opłacalności akumulacji kapitału fizycznego, wysokich nierówności w podziale dochodu, niskiego wzrostu gospodarczego i spowolnionej akumulacji kapitału, niniejsza praca przedstawia argumenty różnego pochodzenia, które popierają pogląd, iż znacząca realokacja portfelowa podejmowana przez posiadaczy majątku jest ważną cechą gospodarki opartej na wiedzy. Przedstawiono niektóre z implikacji związane z teorią ekonomiczną, jakie wynikają z dostępności aktywów różnych od kapitału fizycznego i innych aktywów bardziej związanych z potrzebami produkcyjnymi, podkreślając przy tym, że prowadzi to do negacji koniecznego pojawienia się automatycznych, równoważących mechanizmów, popieranych przez teorię neoklasyczną, na podstawie których pojawienie się wyższych nierówności w podziale dochodu prowadziłoby do występowania większej akumulacji kapitału fizycznego.

Słowa kluczowe: teoria Keynesowska, podział dochodu, finansyzacja, gospodarka oparta na wiedzy, wzrost gospodarczy.

JEL: E12, M11, N10, O11.