



Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

Arne Heise

A Keynesian-Minskian Perspective on the Transformation of Industrial into Financial Capitalism

ZÖSS
ZENTRUM FÜR ÖKONOMISCHE
UND SOZIOLOGISCHE STUDIEN

ZÖSS-Discussion Papers
ISSN 1868-4947/96
Discussion Papers
Hamburg 2022

A Keynesian-Minskian Perspective on the Transformation of Industrial into Financial Capitalism*

Arne Heise

Discussion Paper

ISSN 1868-4947/96

Zentrum für Ökonomische und Soziologische Studien

Universität Hamburg

Oktober 2022

* I received helpful comments from Heinz-Peter Spahn. Of course, the usual caveats apply.

Impressum:

Die Discussion Papers werden vom Zentrum für Ökonomische und Soziologische Studien veröffentlicht. Sie umfassen Beiträge von am Fachbereich Sozialökonomie Lehrenden, NachwuchswissenschaftlerInnen sowie Gast-ReferentInnen zu transdisziplinären Fragestellungen.

Herausgeber/Redaktion:

Zentrum für Ökonomische und Soziologische Studien (ZÖSS)

Arne.Heise@uni-hamburg.de

Universität Hamburg

Fakultät für Wirtschafts- und Sozialwissenschaften

Fachbereich Sozialökonomie

Welckerstr. 8

20354 Hamburg

Abstract

The capitalism John Maynard Keynes struggled to analyse was clearly an industrial capitalism in which the investor used physical capital only to end up with more money than he started with. It is particularly the post Keynesian school of ‘monetary or fundamentalist Keynesianism’ which elaborated Keynes’s monetary theory of production into an alternative economic paradigm that replaces the exchange ontology with an ontology based on nominal obligations. As economic history reports a higher speed of financial than real asset accumulation over the past half a century – a process often dubbed ‘financialisation’ –, doubts have been raised as to whether this transformation of industrial capitalism into financialised capitalism demands for a new macroeconomic approach.

‘Financialisation’, however, may mean different things: We have to distinguish between a mere enlargement of the financial sector due to an increase in financial intermediation on the one hand and a structural change of investment motives on the other hand. While the former may leave the central mechanics of accumulation and growth unchanged, the latter may impact on the process of social provisioning (resource management) in a monetary production economy as described by monetary Keynesianism. In this paper, we will elaborate in a very preliminary way whether the process of financialisation will amend the economics of monetary production as put forward by Keynes in his *General Theory*, elaborated by monetary Keynesianism and extended by Hyman Minsky’s financial instability hypothesis and trace on these theoretical grounds the transition from industrial capitalism into financial capitalism.

Key words: John Maynard Keynes, Hyman P. Minsky, monetary production economy, industrial capitalism, financial capitalism, Financial Instability Hypothesis

JEL classifications: G01, G20, E12, E32, E44, E5, E60, N10, P16

1. Introduction

In late 1932 John Maynard Keynes wrote a short contribution to the *Festschrift* for the German economist Arthur Spiethoff in which he outlined the endeavour he had embarked upon just after the publication of his *Treatise on Money* in 1930:

In my opinion the main reason why the problem of crisis is unsolved, or at any rate why this theory is so unsatisfactory, is to be found in the lack of what might be termed a *monetary theory of production*. The distinction which is normally made between a barter economy and a monetary economy depends upon the employment of money as a convenient means of effecting exchanges – as an instrument of great convenience, but transitory and neutral in its effects. ... That, however, is not the distinction which I have in mind when I say that we lack a monetary theory of production. An economy, which uses money but uses it merely as a neutral link between transactions in real things and real assets and does not allow it to enter into motives or decisions, might be called – for want of a better name – a *real-exchange economy*. The theory which I desiderate would deal, in contradiction to this, with an economy in which money plays a part of its own and affects motives and decisions and is, in short, one of the operative factors in the situation, so that the course of events cannot be predicted, either in the long period or the short, without a knowledge of the behaviour of money between the first state and the last. And it is this which we ought to mean when we speak of a *monetary economy*. (Keynes 1933a: 408f.; italics in original.)

It is well known that the *General Theory of Employment, Interest and Money* is Keynes's attempt to provide such a monetary theory of production and, also, that he believed his theory would transform the economic discipline – although Thomas S. Kuhn's *Structure of Scientific Revolutions* had yet to be published at the time Keynes was writing, it appears beyond doubt that he intended a paradigm shift in a Kuhnian sense from a real-exchange paradigm towards a monetary production paradigm. Of course, the Great Depression – which began as a financial crisis – was the canvas on which Keynes developed his ideas and there are some remarks scattered across the *General Theory* that point to Keynes's awareness of the importance of financial development for the real side of an economy. Yet Keynes's focus in the *General Theory* was clearly on explaining the laws of motion of a monetary (or entrepreneur, as he also dubbed it) economy using an asset – money – “in terms of which the factors of production are remunerated will ‘keep’ more readily than the output which they are being remunerated to produce” (Keynes 1933b: 86). Or, to put it differently, in the portfolio model developed in Chapter 17 of the *General Theory* Keynes merely distinguishes between real capital expecting to earn a yield but incurring considerable carrying cost and liquid capital without any pecuniary reward, yet free of carrying cost and being bestowed with a non-pecuniary liquidity premium. The capitalism he struggled to analyse was clearly an industrial capitalism in which the investor was someone who “...is interested, not in the amount of product, but in the amount of money which will fall to his share. He will increase his output if by so doing he expects to increase his money profit, even though this profit represents a smaller quantity of product than before” (Keynes 1933c: 82).

It is particularly the post-Keynesian school of ‘monetary or fundamentalist Keynesianism’ which elaborated Keynes's monetary theory of production into an alternative economic

paradigm that replaces the exchange ontology with an ontology based on nominal obligations denominated in the most liquid asset: money.¹ For a paradigmatic approach based on nominal obligations as their primary constituent, the evolution, distribution and composition of wealth and debts must surely be important. Now, as economic history records growing (personal) income and wealth inequality, a shift in corporate governance structures from stakeholder to shareholder value orientations and a relatively stronger pace of financial than real asset accumulation (Chancel/Piketty/Saez/Zucman et al. 2022) – a process often dubbed ‘financialisation’ – doubts have been raised as to whether this transformation of industrial capitalism into financialised capitalism calls for a new macroeconomic approach².

Hitherto, the concept of ‘financialisation’ has yet not been well defined, however. We have to distinguish between a mere enlargement of the financial sector due to an increase in financial intermediation and a structural change of investment motives spurred by policies to free and feed financial markets during the age of neoliberalism (see e.g. Palley 2021). While the former may leave the central mechanics of accumulation and growth unchanged and may even improve resource allocation by improving risk management, the latter may impact on the process of social provisioning (resource management) in a monetary production economy as described by monetary Keynesianism. In this paper, we will elaborate in a very preliminary way on whether the process of financialisation will amend the economics of monetary production as put forward by Keynes in his *General Theory* and extended by monetary Keynesianism.³ The paper is structured as follows: in part 2 the process of financialisation will be conceptualised and the new macroeconomics of financialised monetary production outlined. In part 3, stability issues will be raised and Hyman P. Minsky’s Financial Instability Hypothesis will be extended to the theory of financialised monetary production. Finally, Part 4 offers a summary of the arguments.

2. Financialisation as part of new modes of corporate finance and corporate governance

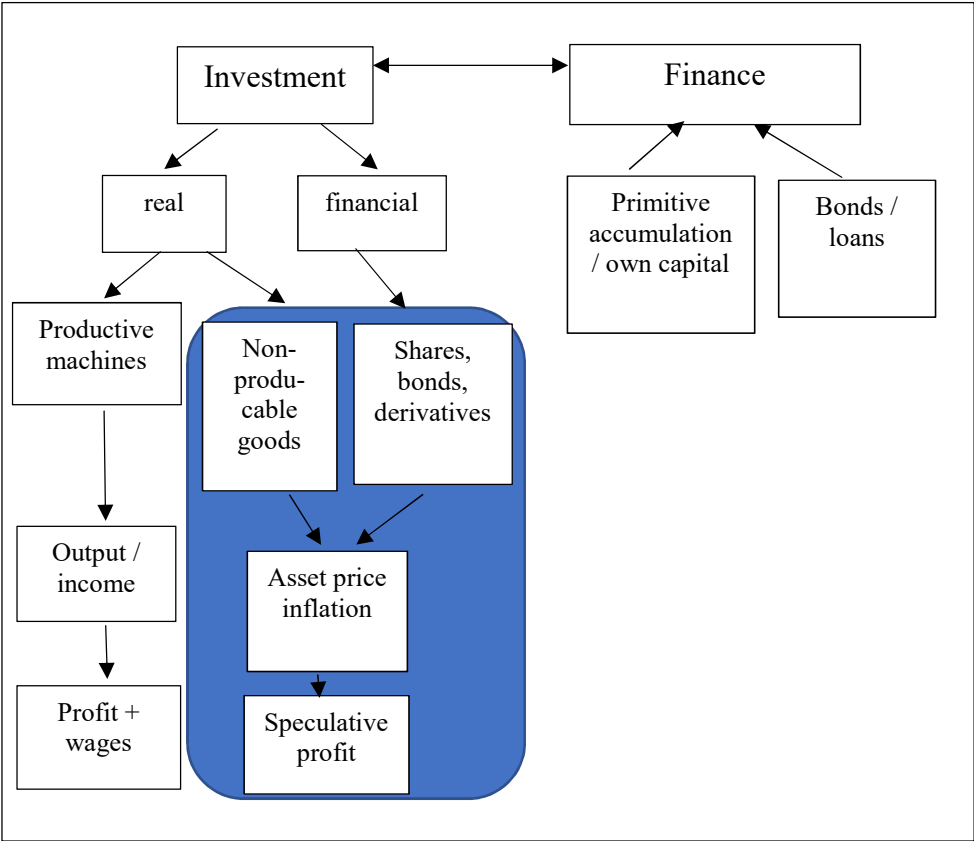
We define ‘financialisation’ in this context as the increased activity of non-financial firms in financial markets. The increase in financial market activity is accompanied by a relative decline in their core business indicated by a relative slow-down in physical capital accumulation, i.e. real investment.

1 See e.g. Coddington 1976, Davidson 1972, Davidson 1994, Davidson 2007, Dillard 1955, Dillard 1980, Heinsohn/Steiger 2013, Heise 1991, Heise 2019, Herr 2011, Herr 2013, Kregel 1985, Minsky 1975; 52ff., Riese 1986. According to Roncaglia (2013) Minsky’s ‘monetary production economy’ combines elements of Keynes’s and Kalecki’s analysis.

2 Although there are already different terms in the literature to describe this new regime of capitalism – e.g. casino capitalism (Strange 1986), money manager capitalism (Minsky 1993) or turbo capitalism (Luttwak 1998) – I dare venture that the present study is the first to propose a macroeconomic theory of a financialised economy. The neo-Marxian regulation school handles its ‘financially-led capitalism’ (see e.g. Boyer 2000; Guttman 2008) as a new institutionalised structure (‘regime’) for restoring capital profitability after the exhaustion of industrial capitalism. Thus, it locates the effects of financialisation mainly in the institutional superstructure of the capitalist economy, whereas I will be more concerned about implications for the theoretical core of the macroeconomics of capitalist economies.

3 Other schools of post-Keynesianism, which are particularly based on Michał Kalecki’s work, have already left their imprint on the discussion about the conceptualisation of financialisation (see e.g. Karwowski/Shabani/Stockhammer 2020, Michell/Toporowski 2013, van Treeck 2012) and have provided an empirical picture of the process of financialisation which will not be reproduced here; see e.g. Orhangazi (2008), Epstein (2005).

Figure 1: Finance, investment and financialisation



In Figure 1, financialisation is depicted by a growing importance of investment activity in the shaded area: in Keynes’s monetary theory of production it is taken for granted that investments (the asset side of the balance sheet) financed through bank loans, bonds or some kind of ‘primitive’ or original accumulation as one’s own capital (on the liability side of the balance sheet) are made particularly in physical capital in order to produce commodities that are expected to sell for a price not only to earn wages and enable capital appreciation but also to gain profits that match the risk and liquidity premia put on the financial resources initially deployed. But in recent times, investment in financial capital for its own sake and in non-producible goods has become ever more important. In these cases, investment is not made in order to produce an expected yield from selling produced commodities but simply from an expected inflation of the price of the asset itself.

Keynes was quite aware of this distinction, calling investment of the first type – i.e. in physical capital for the purpose of creating value added – ‘enterprise’, while he termed the second type ‘speculation’ and he left little doubt that he judged speculation to be rather dangerous to the overall welfare of an economy and society:

If I may be allowed to appropriate the term speculation for the activity of forecasting the psychology of the market, and the term enterprise for the activity of forecasting the prospective yield of assets over their whole life, it is by no means always the case that speculation predominates over enterprise. As the organisation of investment markets improves, the risk of the predominance of speculation does, however, increase. ... Speculators may do no harm as bubbles on a steady stream of enterprise. But the position is serious when enterprise

becomes the bubble on a whirl-pool of speculation. When capital development of a country becomes the by-product of the activities of a casino, the job is likely to be ill-done. The measure of success attained by Wall Street, regarded as an institution of which the proper social purpose is to direct new investment into the most profitable channels in terms of future yield, cannot be claimed as one of the outstanding triumphs of laissez-faire capitalism – which is not surprising, if I am right in thinking that the best brains of Wall Street have been in fact directed towards a different object. (Keynes 1936: 158f.)

However, Keynes was not very explicit about the macroeconomics of such ‘casino capitalism’⁴ and, surely, his new economics of the *General Theory* was concerned with a capitalistic economy in which enterprise was still predominant (‘entrepreneur economy’). Yet, when does casino capitalism rise and what are its consequences which seemed to have frightened Keynes? The institutionalisation of financial markets appears to be a necessary precondition, yet is it sufficient? Moreover, is casino capitalism characterised merely by increased instability and volatility due to its lower transaction cost, shorter reaction time and shorter time horizon for profit generation? Or is the growth path to be re-determined in principle?

Figure 2: The corporate balance sheet of non-financial companies

Assets	Finance
<ul style="list-style-type: none"> ❖ physical capital <ul style="list-style-type: none"> * machines * inventories * shares ❖ financial capital <ul style="list-style-type: none"> * credit certificates * hedge funds * securitisations * shares ❖ money capital <ul style="list-style-type: none"> * cash * deposits 	<ul style="list-style-type: none"> ❖ equity liabilities <ul style="list-style-type: none"> * bank loans * bonds * mortgages

Let us first take a look at the requirements for a transition from entrepreneur (monetary production economy) to casino capitalism (financialised economy). Before doing so, we shall subject the balance sheet of companies to closer scrutiny (see Fig. 2): on the asset side, we find items of real, financial and money capital. Real assets comprise physical capital such as machines, constructions, stocks and shares when they serve the purpose of exercising control over a company. Financials assets include bonds and a whole range of credit certificates, securitisations, derivatives and other financial market papers that have been invented at increasing speed over the past fifty years (see e.g. Arthur 2017: 53, Miller 1986, Lerner 2006) and shares when they are solely held in anticipation of asset price inflation.

⁴ As already noted, the expression ‘casino capitalism’ was popularised by Susan Strange (1986), who explicitly drew on Keynes. Although I treat the rise of ‘casino capitalism’ and ‘financialisation’ as synonymous, I agree with Cassidy (2009) when he argues that the ‘casino’ metaphor is not appropriate because gambling in a casino takes place under calculable circumstances while speculation on the future price of assets is undertaken in fundamentally uncertain circumstances.

Money capital comprises cash holdings and deposits. The finance side of the balance sheet is made up of people's own capital ('equity') and liabilities of different kinds.

According to the famous Modigliani-Miller theorem, companies are indifferent in their use of equity or liabilities in order to finance their assets – however, that is only true under conditions of 'complete markets', i.e. in the unrealistically assumed absence of taxation, regulations and information cost and restrictions imposing transaction cost. Put differently, the 'optimal' corporate finance structure depends on taxation, financial market regulations, information cost and restrictions and transaction cost, which may change quite drastically over time due to political action, technological and financial innovations and cultural changes. On the one hand, the growing importance of liabilities compared to equity in the balance sheet of companies – increasing leverage or corporate indebtedness – and, additionally, a growing rate of marketisation of equity (volume of shares trade/GDP) is correlated with financial market deregulations and major technological, financial and institutional innovations since the collapse of the Bretton Woods system at the end of the 1960s. On the other hand, a shift from owner-managed ('entrepreneur capitalism') to manager-controlled corporate governance ('managerial capitalism') and the emergence of managerial reward schemes based on the maximisation of equity value as measured by stock exchanges shifted companies' ultimate objective from long-term maximisation of profit ('stakeholder value') to maximisation of short-term shareholder value (see e.g. Cheffins 2015, Chandler 1984, Duménil/Lévy 2018).

This part of the process of financialisation – a deepening of financial intermediation – has been rationalised by mainstream economists as basically improving the allocation of capital and increasing corporate control. As this, again, can only be argued under 'complete market' conditions – which obviously do not exist in reality – regulatory and institutional transformation can create new or other forms of market failure basically linked to growing information problems due to the prolongation of credit chains (Jenkinson/Penalver/Vause 2008: 333ff.).

Financialisation proper refers to the asset side of the balance sheet of non-financial firms: the accumulation of financial capital has significantly outpaced physical capital, placing ever more emphasis on income generation by way of asset price inflation rather than by producing added value. Although deepening financial intermediation as discussed above must also find expression on the asset side of companies, these companies would commonly be financial firms (banks or other financial intermediaries). The novel development dubbed financialisation is about increasing financial capital in non-financial firms and the shift in operational objectives that entails. The driving forces behind this shift can be found in the dwindling attractiveness of real capital, the growing attractiveness of financial capital or a co-movement of both.

2.1 What caused financialisation?

In order to better understand the drivers of financialisation, we have to extend the portfolio model introduced by Keynes in Chapter 17 of his *General Theory*: any wealth owner has the choice between not only two but three different types of assets – real capital, financial capital and money capital – yielding different types of rewards – a nominal yield q , a liquidity premium l and a capital gain r – involving some transaction costs comprising the expense of restoring full liquidity and covering "wastage (...) through the mere passage of time (...), irrespective of their being used to produce a yield..." (Keynes 1936: 225). We assume that

money capital is the only asset that yields a liquidity premium l but no yield q and does not incur transaction cost c . Real capital is expected to produce a yield q , but is not bestowed with a liquidity premium l and may produce considerable transaction cost c_q . Financial capital, finally, generates capital gains r and also incurs transaction cost c_f , yet these costs – particularly liquidity-restoring cost – are lower than in the case of real capital once financial markets are established (see Tab. 1). In equilibrium, we know that all rates of return must be equal:

$$(q - c_q) = (r - c_f) = l \quad ; \text{ with } c_q > c_f \tag{eq. 1}$$

This implies:

$$q > r > l \tag{eq 2}$$

The profit rate in production must always exceed the financial rate of return and the liquidity premium on money.

Table 1: Varieties of capital and rates of return

	Real capital	Financial capital	Money capital
Yield q	Positive	--	--
Liquidity premium l	--	--	Positive
Capital gain r	--	Positive	--
Transaction cost c	Positive: considerable	Positive: high - low	--
Net income	$(q - c_q)$	$(r - c_f)$	L

Before we come to see whether this approach differs in substance from the analysis of a monetary production economy with only two different types of assets – money and real capital – in the *General Theory*, we will consider this exposition with respect to providing explanations for the process of financialisation. Financial capital will become more attractive when the (expected) capital gain increases and transaction cost, the liquidity premium on money and the yield on real capital fall. Both political measures as part of neoliberalism as much as genuine economic forces can be put forward here (see e.g. Kotz 2011): the long process of de- or, rather, re-regulation of financial markets after the break-down of the Bretton Woods system and technological and institutional innovations, justified by the allegedly positive allocative effects of deepened financial intermediation critically discussed above, have also contributed to financialisation along with the on-trend falling rate of profit of productive investment in the course of ongoing accumulation – something Keynes called the falling marginal efficiency of capital and Marx dubbed the tendency of the rate of profit to fall. Additionally, growing income inequality – personal income inequality much more so than functional income inequality – as a result of labour market deregulation and collective

bargaining decentralisation pushed the process of financialisation as it undermined aggregate demand and increased financial market turnover. The omission to pursue demand-orientated fiscal policies in the age of neoliberalism⁵ further contributed to the process of continuously transforming the entrepreneur economy into a casino capitalism.

2.2 The macroeconomics of financialised monetary production

Turning to a more comprehensive study of what financialisation does to the macroeconomy, we have to distinguish between its potential impact on stability or instability as measured by the frequency and amplitude of business cycles on the one hand and on the equilibrium position (in static perspective) or the growth path (in dynamic perspective) of the economy on the other. As we will be concerned with the former in the next chapter, this is the place to theoretically speculate on the impact of financialisation on the equilibrium position or growth path of a monetary production economy.

In mainstream macroeconomics based on intertemporal exchange and informed by an allocative perspective, in principle financialisation takes the view of deepening financial intermediation, which *grosso modo* improves capital allocation and thereby raises the growth path of an economy (see e.g. King/Levine 1993, Rajan/Zingales 1998). However, this clear statement can only be maintained when all possible market failures are excluded from consideration, something which was probably accepted all too often prior to the Global Financial Crisis after 2007 but has no longer been adequate ever since. This has brought an uneasy trade-off to light between the effects of financialisation on capital allocation and on temporary over- or underspending on investment and consumption causing growing volatility in both the financial and the real sector of the economy (see e.g. Greenwood/Scharfstein 2013), resulting in the Solomonic judgement: “In evaluating the implications of the growth of the financial sector, such concerns need to be weighed against the many benefits that we have identified“ (Greenwood/Scharfstein 2013: 26).

The post-Keynesian theory of monetary production as the alternative paradigm advocated here is informed not only by allocative considerations (control of resources) but also by considerations relating to social provisioning (management of resources). Hence the growth path is determined not only by the availability of resources but also by the exertion and exhaustion of available resources. Mobilising such resources to produce output and income depends on the provisioning of money for a specified period of time (nominal obligations or ‘finance’) on the basis of the liquidity preference considerations of wealth owners. Hitherto, we have tacitly assumed that finance is exclusively used for productive purposes, i.e. accumulation of real capital, or investment for short. Under conditions of financialisation, the provision of finance may also be used for speculative purposes, i.e. to buy financial capital with the intention not to provide real capital but merely to profit from expected asset price changes, resulting not in value added but in a re-distribution of wealth. Whether or not this

5 Neoliberalism is also characterised by growing public indebtedness. However, public debts during the neoliberal era are the result not of proactive deficit spending on the expenditure side, but of tax cuts for companies and higher income earners on the revenue side of public budgets (see e.g. Palley 2021: 25f.). For an historical account of the US, see e.g. Palley (1998); for Germany and the UK see e.g. Heise (2008a). Concepts such as the ‘natural rate of unemployment’ (NRU) and the ‘non-accelerating inflation rate of unemployment’ (NAIRU) were established and used to de-legitimise Keynesian-type fiscal policies, see e.g. Galbraith (1997). Of course, the extent of omission was different in different periods and different countries; see e.g. Heise (2008b).

has a systematic effect on macroeconomic outcomes depends, crucially, on the formation of asset prices as they determine the profitability of financial capital.

This is the place where the term ‘fundamentals’ comes into play: under – unrealistic – conditions of complete markets, asset prices would have to be determined by their discounted future returns. Changes in such asset prices would have to mirror changes in future returns – i.e. would have to be based on fundamental data concerning the expected profitability of the asset. Any deviation of the asset price from the price determined by the fundamentals of the asset would be unsystematic and coincidental – arbitrage would set in and bring the asset price back in line with its fundamentals. This kind of transaction, although based on purely speculative grounds as defined above, could be termed ‘stabilising speculation’.

However, it is a well-documented fact that the markets are not complete and that the asset price does not always reflect fundamental values (see e.g. Hirshleifer 2001, Binswanger 2004, Zhou/Yang 2019). Although deviations can be extreme and prolonged (‘de-stabilising speculation’), as long as they are equally distributed in both directions (over- and undervaluation), we are concerned with issues of (in-)stability and volatility rather than issues of the growth path. Hence, if the latter is our focus, we have to search for reasons why the prices of financial assets are systematically over- or undervalued with regard to its (real economic) fundamentals. Moreover, as we have empirical indications that financialisation is correlated with a slow-down of real capital accumulation and a lowering of the growth path,⁶ the growing share of financial market papers in the balance sheet of companies appears to result in a replacement of real capital by financial capital rather than a mere addition.

The heterodox literature basically provides three reasons for such a systematic, negative effect of financialisation on the growth path: first, it has been argued that growing income inequality via decentralised collective bargaining systems, deregulated labour markets and new managerial compensation schemes correlated with financialisation depresses expected profits from an aggregate demand perspective and thus reduces investment and growth. Secondly, the accelerated transformation of the owner-managed company towards manager-controlled corporate governance has created a principal agent problem: while the owner has an interest in maximising profit in a long-term perspective, manager-controlled companies will be more interested in keeping or expanding market shares and thus company growth via real capital accumulation. Based on a Marxian-Kaleckian conception of companies’s investment behaviour (‘accumulate, accumulate, that is Moses and the prophets’), manager-controlled firms tend to over-invest compared to owner-managed firms because stakeholders (the owners) lack the information and means to push through their interests.⁷ It is only when equity can be traded freely and at low cost on financial markets (stock exchanges) that owners may regain control and force their objective (maximising profit) onto managers to the detriment of real capital accumulation. Thirdly, a mixture of incentives – manager compensation schemes linked to shareholder value as measured on the stock markets and threats of unfriendly take-overs – will cause managers to target above-average

6 See e.g. Stockhammer (2004), Stockhammer (2005), Orhangazi (2008), Tomaskovic-Devey/Lin/Meyers (2015). However, a more recent study questions the causal relationship between investment slowdown and financialisation; see Karwowski/Shabani/Stockhammer (2020).

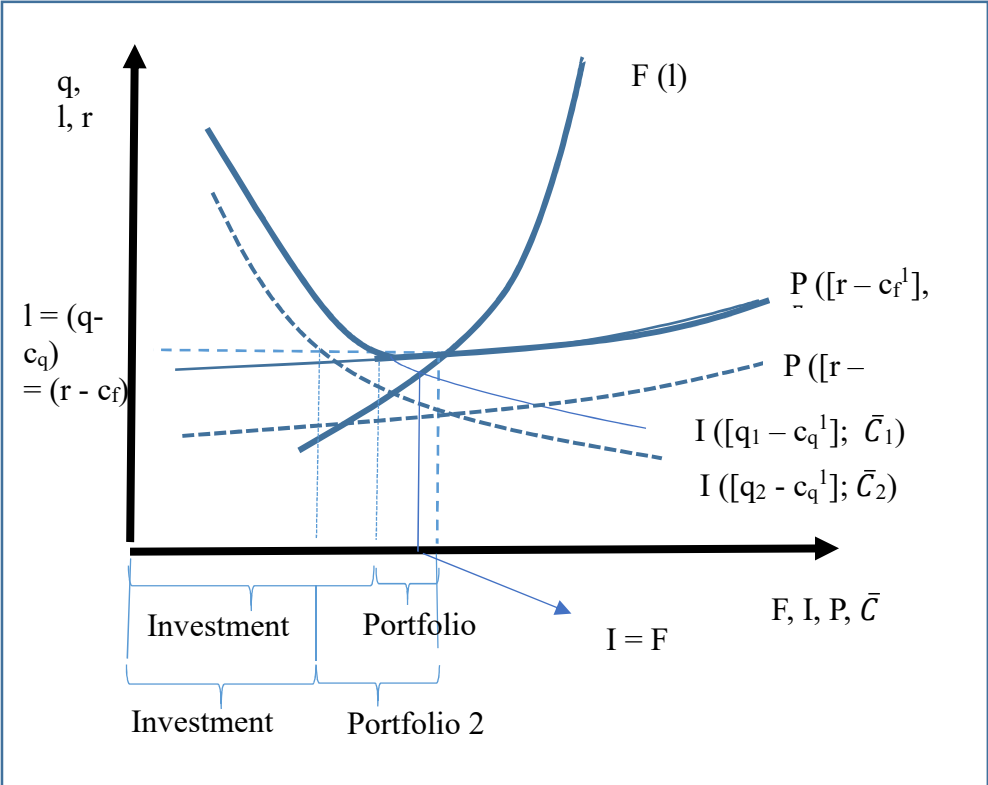
7 It has been argued that this approach tacitly assumes owners to be highly dispersed with little control; see e.g. Braun (2021)

rates of return in order to keep the asset price over-valued⁸ again at the expense of investment opportunities (which would only yield average profit rates) and growth.

As the Marxian-Kaleckian approach to capital accumulation does not appear to be in line with Keynes’s theory of investment advocated here (see e.g. Heise 2019) and can easily be contested on the grounds that deviant behaviour on the part of managers may be sanctioned by stakeholders just as much as by shareholders once we assume them to be mainly professional investors (see e.g. Conard 1988, Braun 2021), a potential long-term effect of financialisation on economic activity in a monetary production economy operates, rather, via its impact on income inequality and on managerial incentives for above-average profit and shareholder value performance. It has been shown (see Dalziel 1999/2000) that asset prices (shareholder value) depend (inter alia) on the aggregate debt–capital ratio: growing corporate leverage – i.e. corporate finance generated through liabilities instead of equity issues – that is not (entirely) used to increase real but financial capital accumulation will cause asset prices to rise and will thus increase capital gains.

If we combine corporate governance (shareholder value incentives) and corporate finance (increasing corporate indebtedness) developments characterising financialisation, a structural shift from real capital (physical investment) to financial capital (portfolio investment) will be the outcome of a financial economy (casino capitalism) compared to a monetary production economy (entrepreneur capitalism). This is demonstrated in Figure 3.

Figure 3: The market for liquid means under conditions of financialisation



⁸ See e.g. Fortier (1989). Former chief executive of the Deutsche Bank, Josef Ackermann, was heavily criticised when he announced a 25-per-cent profit rate target for his institute and, at the same time, a severe cut in banking staff. Although he never reached this target, it was to signal the markets that shareholder-value orientation was precisely what was needed if Deutsche Bank was not to become a potential candidate for an unfriendly takeover.

In the financial market, money wealth-owners part with their liquid means for a specified period of time – finance F as a positive function of the liquidity premium l – and entrepreneurial investors use these liquid means in order to buy real, physical capital – I as a negative function of the (expected) yield rate q minus transaction cost c_q – and portfolio investors (speculators) try to take advantage of asset price inflation – P as a positive function of the rate of capital gains r minus transaction cost c_f and the debt–capital ratio (F/C). If we assume such a transaction cost c_f to be high (e.g. c_f^2 are high due to regulations or taxes), portfolio investment may become unattractive and total finance will be spent on real capital up to the level where the expected profit rate (marginal efficiency) just equals the liquidity premium – this would be the world of a purely entrepreneur economy. Once transaction costs fall (e.g. c_f^1 are low due to deregulation or tax reductions), portfolio investment becomes more attractive and starts to substitute physical investment up to the point where expected profit rates equal the rate of capital gains from systematically over-valued assets and the liquidity premium of wealth owners. Therefore, in a world of casino capitalism, the rate of real capital accumulation, and with it income creation, suffers.⁹ With ongoing accumulation, i.e. with higher capital stock \bar{C}_2 than \bar{C}_1 in comparative-static perspective, the expected profit rate of newly invested real capital will fall, making, *ceteris paribus*, financial capital on top relatively more attractive and thus further increasing the share of portfolio investment in total investment (Portfolio 2 > Portfolio 1).

In summary, financialisation operates as a constraint on physical capital accumulation. The liberalisation of financial markets and the creation of financial product and process innovation may, to some extent, improve the allocation of resources by financial deepening, yet it surely impairs the management of resources by creating income opportunities based on redistribution rather than added value.¹⁰ These negative effects – which have been empirically corroborated – are caused on the one hand by neoliberal policies of financial and labour market deregulation and flexibilization, new regimes of corporate governance and control enriched by particular managerial compensation schemes, but on the other hand they are also triggered by endogenous demand constraints due to growing income inequality, restricted profit opportunities in goods and service markets and the refusal of economic policy to step in. Moreover, there is a structural tendency for mature monetary production economies to develop into financial economies. However, this path is not a linear one, but it can be transformed through regulations, political interventions and innovation that increase the relative profitability of real accumulation to the detriment of financial accumulation.

3. Financialised monetary production and the instability hypothesis

Macroeconomic outcomes of economic activity can be conceptualised in many different ways: we can try to explain the ‘normal’ position of a capitalist economy in the sense of a gravitation centre in which the economy will eventually converge if no internal or external shocks occur and all adjustment processes have had time to take effect. This could be the

9 Heine/Herr (1996: 63) point to a potential feedback effect: the shift of finances from real to financial capital will be accompanied by increasing volatility of nominal prices, particularly of assets and currencies, and thus may increase the liquidity preference of money wealth owners. In fig. 3, this will result in a shift of the F -curve to the left and may curtail available finances for either speculative or investment purposes.

10 Tsalki/Tsoulfidis (2021) question the idea of financialisation being a new phase of capital accumulation characterized by its own economic laws. However, at least to me it remained unclear whether this meant to rejected the claim that financialised capitalism is conceptually different from industrial capitalism or merely the claim that today’s financialised capitalism is unique in economic history (and, therefore, different from earlier developments).

case when supply and demand equalise or expectations are fulfilled – some kind of static equilibrium. It is all too obvious that such a position either will never be reached in reality or, if so, will not last long. Nevertheless, being able to describe this ‘normal’ position is not only an intellectual endeavour but also an important target or baseline scenario from which to depart in order to explain real world phenomena or to formulate policy measures.

Another way would be to take a more dynamic view in analysing the development of the capitalist economy through time. If this is historical time, the complexity of real historical events would be too high to predict *ex ante* or to explain accurately *ex post*. But we could strive for an understanding – *ex ante* and *ex post* – of regularities in developments: the growth path in a normative sense, the business cycle in normative and positive orientation or, more generally, the volatility of economic development as a systematic feature of capitalist economies. Additionally, underneath macroeconomic developments there is always a process of structural change at play that is based on technical and social innovations, cultural changes, political shifts and other determinants.

John Maynard Keynes, as already noted, was most concerned with the former, while Joseph Alois Schumpeter, for instance, was particularly interested in innovation-driven developments, and Friedrich August Hayek’s particular interest was in business cycles caused by monetary policy. While Schumpeter and Hayek can be seen to have accepted the market exchange paradigm of mainstream economics, Keynes’s contribution was, at least, to sketch an alternative paradigm of a monetary production or entrepreneur economy. Hyman P. Minsky followed Keynes in his intention to provide a new paradigm – something he called the ‘Wall Street paradigm’ – yet his orientation was dynamic in elaborating what Keynes only touched upon in Chapter 22 of his *General Theory*: a theory of capitalist instability based on financial structures (i.e. debtor–creditor relationships) and a theory of regulatory capture explaining the systematic character of capitalist instability.¹¹

3.1 Instability as a general feature of capitalist economies

Minsky’s theory of financial instability is independent of the process of financialisation discussed in the chapter above. However, financialised monetary production may be even more prone to instability and fluctuations than traditional capitalism – more on this below. The core of social provisioning in a capitalist economy is investment – first of all in productive capacity. Investment needs finance, i.e. monetary resources to buy real capital goods and to provide wages for workers, and prospects of future income from sales proceeds. These proceeds must exceed the initial financial outlays by the margin determined by the risk of misjudgement of the market potentials involved in any business (borrower’s risk asking for a default premium) and the risk involved in not being liquid until proceeds flow in (lender’s risk asking for a liquidity premium)¹². Often investment is imagined as being of the point-

11 In Minsky’s words: “The gestation period of *The General Theory* was the time of the Great Depression, which was triggered by a crisis followed by a debt-deflation process, first in the United States and then world wide. However, Keynes offered no explanation or theory of the crisis. In order to complete the picture we have to fill that hole: Keynes’s theory is incomplete without a model of the endogenous generation of booms, crises, and debt deflations” (Minsky 1975: 61).

12 In a letter to Keynes, Hugh Townshend (1938: 290; italics in original) writes: “As I see it, the reluctance to part with liquid money - ... - has its origin in the doubts of wealth-owners as to what may happen to values before the end of any interval, however short; and I suggest that the basic cause of interest is bound up with this”. In his approving answer, Keynes (1938: 293f.) asserts: “An essential distinction is that a risk premium is expected to be rewarded on the average by an increased return at the end of the period. A liquidity

input, point-output type, i.e. a sum of money is being invested at time t_0 and proceeds flow in at a later date t_1 or as an annuity over a period of time t_1-t_j (with $j = 2, 3, \dots$) – something which is, in fact, quite unrealistic. Much more realistic is investment of a flow-input, flow-output nature, i.e. the outlays for an investment project will have to be made over a period of time t_0-t_i (with $i = 1, 2, \dots$) and the proceeds will result as uneven instalments over a period of time t_1-t_j (with $j = 2, 3, \dots$). This will not only make the calculation of the expected rate of return much more difficult, as it depends not only on the net yield in total but also on its distribution over time, but also involves the management of cash flows for the duration of the investment project. Moreover, at any point in time between t_0 and t_i (with $i = 1, 2, \dots$), the payment of contractual cash outflows must be secured.

In this scenario, the amount of investment spent (and thus of income and employment created) at each point in time depends on the expected rate of return, the default and liquidity premium to be paid on finance and the nature of the financial contracts. Minsky distinguishes between three different kinds: hedge finance, speculative finance and Ponzi finance. If expected proceeds not only promise to yield interest payments at any point in time but also discharge the total debt incurred to run the investment project, the financial contract is dubbed 'hedge finance'. If the expected proceeds just suffice to cover interest payment but not the outstanding liability which must, therefore, be rolled over at the then ruling conditions, the financial contract is called 'speculative finance'. Finally, 'Ponzi finance' comprises such contracts for which proceeds do not even cover interest payments and, therefore, debt must be increased or the asset sold to avoid illiquidity. Hedge finance is prudential, speculative finance may be carried on for some time without punishment, but Ponzi finance must be considered toxic. The degree of financial instability of an economy depends on the relative share of the different kinds of financial contracts: if most financial contracts can be regarded as hedge finance, the economy will be financially stable, if they are mainly speculative, the economy will be rather unstable and, finally, the more Ponzi finance contracts there are, the more fragile the economy.

In a monetary production economy, only hedge finance is sustainable. Speculative finance and even less so Ponzi finance would not be maintained over more than a short period, after which it must promise to become hedge again. So, if non-hedge finance is unsustainable, why should we concern ourselves with speculative or Ponzi finance? On the one hand, if one can engage in financing a project that does not promise to repay the initial liability or even only the interest rate involved, but one can dispose of such accountability (by selling it), the project will still be interesting.¹³ Of course, this can only work if the ultimate performance failure of the project is not known to the buyer when acquiring it on a secondary market – something that can be achieved when bundles of loans of very different risk are lumped together and sold in slices ('securitisation') and rating agencies whose task is to protect the investor (buyer) are paid by the issuer (seller) of the securitised loans.¹⁴ Whether this must be considered market failure on the part of imperfect financial markets ('profitable failure' as Eggert [2009: 1307] puts it) or the illegal behaviour of a market participant must be left

premium, on the other hand, is not even expected to be so rewarded. It is a payment, not for the expectation of increased tangible income at the end of the period, but for an increased sense of comfort and confidence during the period".

13 This is captured by the shift in banking strategy from an 'originate to hold' model towards an 'originate to distribute' model (see e.g. Coupey-Soubeyran 2010: 22).

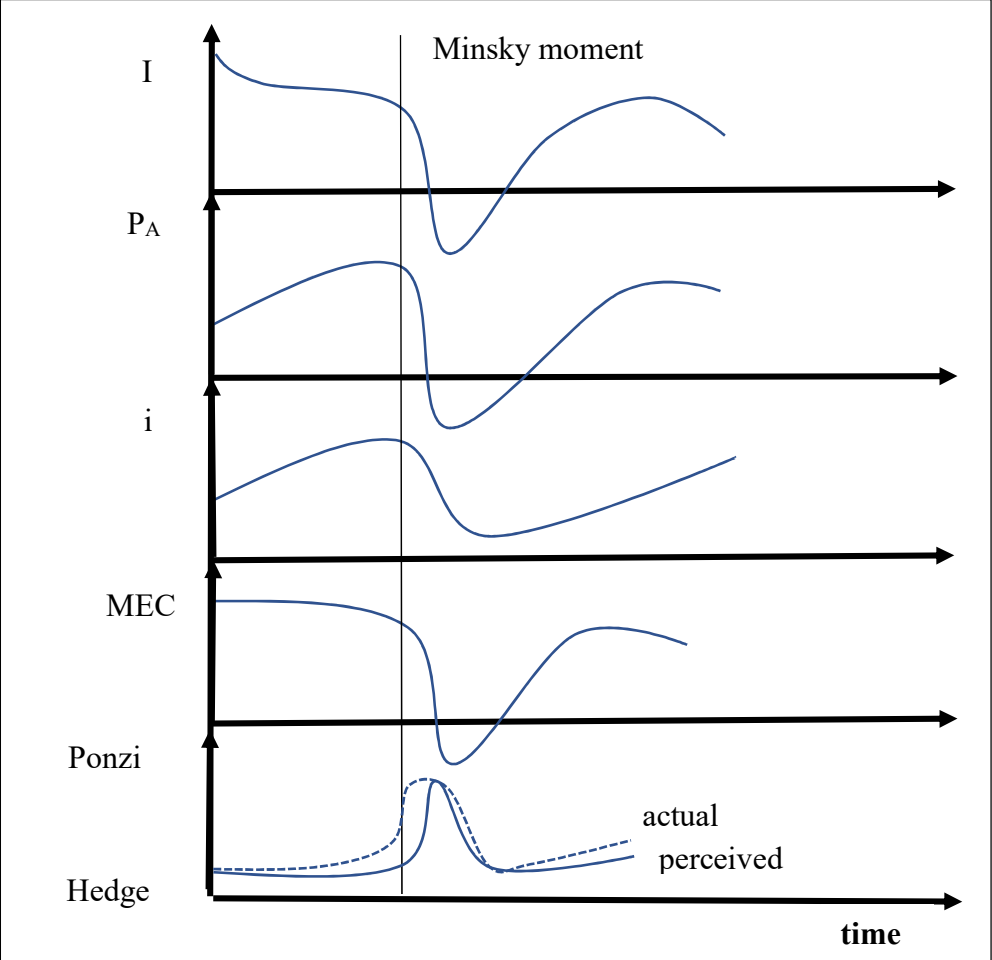
14 The World Financial Crisis after 2007 offers a good example of the consequences: "This resulted in a 'race to the bottom' among the rating agencies on the stringency of their ratings" (Eggert 2009: 1281).

open here; it may remain of only limited importance unless there is another motive for engaging in speculative or Ponzi finance except for 'profitable failure'. And this is the case when the reward of an investment is not a future income stream but an increase in the value of the asset, i.e. capital gains. For instance, lending money to an investor to buy a house which the investor will not be able to repay out of his current earnings may still be profitable, if the value of the house rises and – in the likely event of default – the house is sold covering not only the liability but also the interest claims of the lender. The trouble here is not a potentially high rate of defaults of Ponzi-financed investment *per se*, but a Ponzi finance not supported by asset inflation based on fundamentals. As argued in the previous chapter, such Ponzi finance schemes become ever more interesting during the process of financialisation when there is a shift from investment in real capital towards investment in financial capital (shares or other financial assets) or real assets (such as real estate, precious metal or natural resources) simply because of their expected (self-generated) capital gains due to (expected) asset price inflation ('de-stabilising speculation' as opposed to 'stabilising speculation').

The composition of financial structures determines the degree of (in)stability of an economic system. Hedge finance is vulnerable to changes in commodity and labour markets, and speculative and Ponzi finance are additionally vulnerable to changes in financial markets. Hedge finance may turn into speculative and even Ponzi finance, particularly when factor prices increase or demand for commodities falls beyond expectations – which can always happen, yet is increasingly likely when commodity markets become saturated, the forecast is driven by exuberantly euphoric sentiment or, of course, some external event takes place. In the same way, speculative finance may turn into Ponzi finance – yet speculative and Ponzi finance may also be effected when the financial markets undergo changes and particularly when the interest rate increases or asset prices fall. This will be the case when internal or external inflation is on the rise, the Central Bank restricts its monetary policy, income distribution increasingly becomes a contested issue or the macroeconomic policy actors address their interdependent targets in open conflict with one another (and thus enter into an uncooperative game).

It is Hyman P. Minsky's merit to have addressed the endogeneity of financial instability arising from a transition of a stable financial structure mainly composed of hedge finance towards an increasingly unstable financial structure with an ever larger share of speculative and Ponzi finance – the 'Minsky cycle'. Figure 4 seeks to capture this co-development of different parameters: we begin with a situation of unsaturated commodity markets resulting in high expected profits (MEC) and high investment demand (I) at low interest rates (i) and low asset price inflation (PA). The financial structure at this point in time is to a large degree hedge finance and, thus, quite stable. Let us assume that investors initially formed rather conservative profit expectations to be on the safe side ('margin of safety'). Therefore, there is some likelihood that they will rather be positively surprised by the actual situation and their outlook becomes more enthusiastic, maintaining profit expectations while asset price inflation (and general inflation, which is not shown in Fig. 4) and the interest rate start to rise. At this point in time, expectations may become overly bright (not necessarily exuberant, however) when we assume a certain degree of backward-looking and hysteresis in expectation formation ("... success breeds a disregard of the possibility of failure" [Minsky 1986: 213]). This may lead not only to an increase in more speculative finance as the 'margin of safety' is reduced but also to a cognitive dissonance between actual and perceived financial status.

Figure 4: The Minsky cycle



The financial structure is now deteriorating when some profit expectations turn out to be disappointed, interest rates increase due to rising liquidity premium and investment demand starts to falter. This may carry on into a smooth dampening of economic activity, causing a mild business cycle downturn marked by stagnating prices, eventually falling interest rates and a restructuring of financial obligations ('deleveraging'), slow ignition of investment demand and an endogenous process of growing financial stability, particularly when public budgets step in to maintain aggregate demand. However, the process may also turn out to be more volatile: rising asset prices at an earlier stage of the process may feed consumption demand on the one hand and stimulate portfolio and real investment on the other, causing irrational exuberance (Shiller 2000) and a severe increase in the above-mentioned cognitive dissonance, rendering the economy much more fragile than it is believed to be.¹⁵ A single trigger – the bankruptcy of an important economic actor, a sudden increase in the interest rate, a rumour about disappointed expectations or more generally a 'Minsky moment' – may spark a huge drop in *MEC* and a massive transformation of hedge finance and speculative finance into Ponzi finance, shaking the stability of financial relations. Loan contractions, increasing liquidity preference and a drop in the propensity to consume will aggravate the recession, which might even turn into a veritable depression when borrowers start to default

¹⁵ A whole range of contributions from behavioural economics demonstrate (and can thus be easily rendered compatible with our paradigmatic approach) how – under the assumption of uncertainty, heterogenous beliefs and some behavioural routines replacing rational choice – speculative behaviour may turn Minsky's Wall Street economy into bullish over- or bearish undershooting (see e.g. Caballero/Simsek 2020).

and a vicious circle of falling investment, bursting speculative asset price bubbles, further loan restrictions and falling consumption demand cannot be prevented.¹⁶ As Minsky writes:

Whether the break in the boom leads to financial crisis, debt deflation, and deep depression or to nontraumatic recession depends upon the overall liquidity of the economy, the relative size of the government sector, and the extent of lender-of-last-resort action by the Federal Reserve. Thus, the outcome of a contraction is determined by structural characteristics and by policy (Minsky 1986: 220).

When this statement is compared to Keynes's idea about the business cycle eclipse, the different focus of both scholars becomes evident:

... we have been accustomed in explaining the 'crisis' to lay stress on the rising tendency of the rate of interest under the influence of the increased demand for money both for trade and speculative purposes. At times this factor may certainly play an aggravating and, occasionally perhaps, an initiating part. But I suggest that a more typical, and often the predominant, explanation of the crisis is, not primarily a rise in the rate of interest, but a sudden collapse in the marginal efficiency of capital" (Keynes 1936: 315).

While Keynes's explanation centres around the uncertainty of profit realisation in commodity markets, Minsky put more emphasis on the financing side of real and financial accumulation (see also Minsky 1980). Certainly, although commodity markets are fairly stable, MEC may shift quite drastically. Yet vulnerabilities introduced by financial markets and financial relations underlying real and, particularly, financial capital accumulation must be considered even more severe. These insights may give rise to the idea of strongly regulating financial markets in order to secure the adherence to some required margins of safety.

3.2 The awkwardness of financial market regulations and the Minsky super-cycle

It has been argued that the Global Financial Crisis after 2007 had its origin in the massive process of financial market deregulation in prior decades, which was theoretically backed by Eugene Fama's Efficient Market Hypothesis (see e.g. Fox 2009, Posner 2009). Irrespective of whether the Efficient Market Hypothesis can really be blamed,¹⁷ the question remains whether better regulation of financial markets – as Minsky's Financial Instability Hypothesis suggests – is possible and, if so, why it is not implemented effectively, as the story of many financial crises over the past three decades tells us (see e.g. Bilginsoy 2015, Kindleberger/Aliber 2005).

The economic purpose of regulation is to control market failure due to information and coordination problems and to increase the likelihood of actions which would otherwise not come to the forefront – either because the real-world actors are not as rational as theory often assumes or because they act rationally but rational action leads to unwarranted

¹⁶ This Minskian narrative has been adopted and elaborated by post-Keynesian and neo-Keynesian theorising alike, see Wray (2009) and Eggertsson/Krugman (2012) and the literature cited.

¹⁷ For some critical appraisals see e.g. Ball (2009), Malkiel (2012).

outcomes.¹⁸ Such regulations have been called ‘thwarting institutions’ by Tom Palley (2011), with reference to Ferri/Minsky (1992). However, regulations always also carry transaction costs and, therefore, cost and benefit must be weighed against each other. In financial markets, regulations would be needed to prevent bubbles from happening or at least from bursting, and finance from becoming overly speculative or even Ponzi, i.e. to uphold prudential reason. Regulations should therefore deter lenders as much as borrowers from engaging in excessively risky credit relationships by imposing the need to provide necessary information, demand capital requirements and restrict portfolio investment based on capital gain expectations only. On the other hand, investment being the major driver of intensive as well as extensive growth (the former based on productivity increase, the latter on capacity expansion), any finance-led curtailment of real investment will harm economic growth from a social provisioning perspective. The same may be true from a mainstream allocative perspective (see e.g. Agénor 2019) and there is ample evidence of a (perhaps nonlinear) causal relation between financial market regulation and economic growth that eventually turns into a clear trade-off.¹⁹ What needs to be found is a form of financial market regulation that mitigates exuberant sentiment and reduces the volatility and instability of the economic system yet allows management and control of resources at the highest desired level. What appears difficult to determine theoretically is impossible to establish practically. All we can strive for – considering the regulation of financial markets rather an art than a science – is to regularly adapt regulation to changing conditions in trial-and-error fashion.²⁰ And it is this insight which is at the bottom of what has been termed the Minsky super-cycle.

Let us set out from a situation characterised by hugely unsaturated commodity markets, a high degree of financial market regulation and high growth rates in real capital accumulation and, consequently, in real income and employment. If these developments carry on for some time spanning a few mild Minsky cycles and an on-trend fall in growth rates and employment, the focus of the economic debate will centre on remedies for the oncoming phenomenon of cyclical stagnation: what can be done to increase growth and employment? The answers, of course, will be manifold and different according to the theoretical or paradigmatic position taken: heterodox economists would advocate growing involvement of the state via different kinds of stabilisation policies. Mainstream economists, on the other hand, would rather locate the origin of economic problems in supply-side constraints, calling for measures such

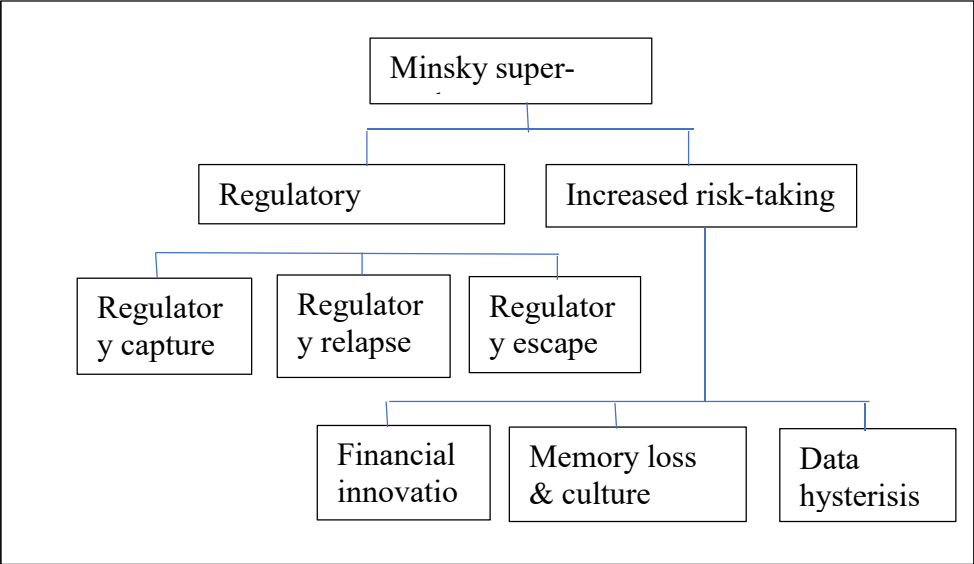
18 This could be the case in strategic or uncertain situations and leads Ferri/Minsky (1992: 87f.) to formulate a ‘anti-laissez’ theorem: “In a world where the internal dynamics imply instability, a semblance of stability can be achieved or sustained by introducing conventions, constraints and interventions into the environment. The conventions imply that variables take on values other than those which market forces would have generated: the constraints, and interventions impose new initial conditions or affect parameters so that individual and market behavior change.”

19 For a meta-analysis, see e.g. Richter/Schularick/Shim (2019) and Bumann/Hermes/Lensink (2013). Libich/Lenten (2020) seem to argue that ‘traditional finance’ (retail banking, insurance, etc.) has a rather positive impact on growth and employment while ‘modern finance’ (financial innovations, asset trading, etc.), as part of the process of financialisation, has a rather negative impact. As stylised facts, these might be insightful. However, this interpretation slightly over-simplistically insinuates that a return to ‘traditional finance’ would do the job and neglects the very ideas of a Minsky super-cycle put forward here.

20 Libich/Lenten (2020: 23ff.), for example, describe a number of measures – however, no indication is given of how much of which needs to be applied to what extent to obtain an ‘optimal’ result. And Ferri/Minsky (1992: 88) are explicit about the necessity for regulations to change over time: “A system of intervention put in place in one environment can be effective for a while, but as agents acquire knowledge of how this system affects their outcomes they will adapt their behaviour and this will change the effectiveness of the interventions. The system of intervention cannot be put in place once and for all. Policy makers must be aware that there are always incentives to evade and avoid the interventions, and they must adjust their interventions accordingly.”

as liberalisation and deregulation of labour, commodity and also financial markets – particularly if financial markets were highly regulated from the outset and if they can build on theoretical foundations that highlight and emphasise the positive impacts of financial development on growth and employment.²¹ Since heterodox economists have never dominated the public discourse on economic policy – and never will, because in that case they would probably no longer be ‘heterodox’ but would rather form the mainstream – their advice tends to be ignored. However, standard or neo-Keynesians – although part of the economic mainstream – entertain policy recommendations somewhat similar to those of heterodox or post-Keynesian economists and they can claim dominance at least for some periods during the past several decades. Yet this will not alter the picture: if they succeed in creating an environment of economic stability – as for instance during the late 1990s and early 2000s, known as the ‘Great Moderation’ – this will only help render periods of instability mere memories of the past and create a positive feeling of self-regulation and self-stabilisation – allowing a policy shift towards allocational issues (as stabilisation issues appear to be resolved²²). If, however, stabilisation policies are not effective, moving towards allocative measures appears to be the only possible alternative.

Figure 5: Minsky super-cycle



Source: Based on Palley (2011: 39)

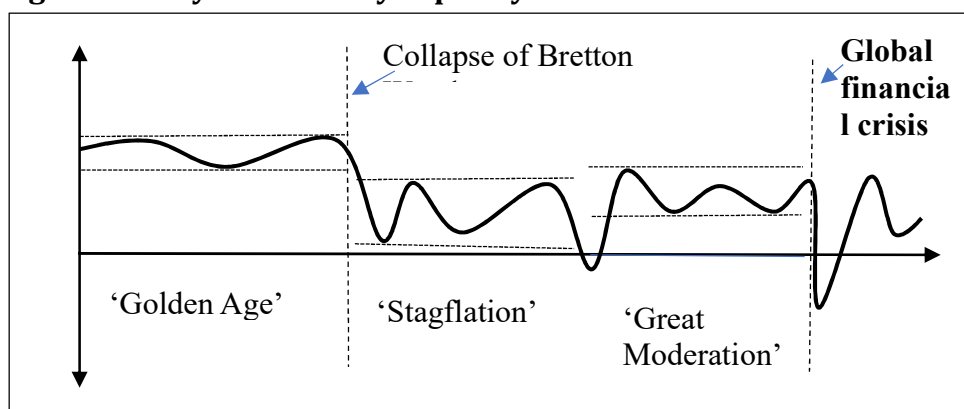
Figure 5 captures these ideas and points out that the Minsky super-cycle, which might span several decades in historical time, is driven not solely by regulatory relaxation but also by a growing readiness to take ever more risk based not only on memory loss but also on financial innovations contributing to regulatory escape and the influence of estimation techniques based on past information²³ about earnings and risks since the introduction of the capital

21 i.e. Fama’s Efficient Market Hypothesis, which can certainly be interpreted to meet such requirements.
 22 “A first problem arises when policy-makers have to rely on the data drawn from time series generated, precisely, by a potentially explosive system that is constrained by interventions and institutional mechanisms. These data may give the misleading impression that they result from a “naturally” stable dynamic process and cannot suitably support policy-making. In a setting of this sort, economists and policy-makers may mistakenly conclude that a system is endogenously stable and that institutional thwarting mechanisms are useless” (Nasica 1999: 14).
 23 Which usually sounds like this: “Assuming that the historical standard deviations and correlations of return are good estimates of future standard deviations and correlations” (Perold 2004: 8). Although the

asset pricing model (CAPM) by Shapiro, Markowitz and others (see e.g. Perold 2004) and the so-called Black–Scholes model that laid the ‘scientific’ foundation for trade in derivatives (see e.g. Steward 2012, MacKenzie 2006).

Regulatory relaxation comprises the undermining of existing regulations by their plain abandonment (deregulation or relapse), the setting-up of new regulations that better fit the regulated (re-regulation or capture) and the invention of new institutions or financial products that do not fall under the existing legislation (escape). Assuming that the existing regulation was efficient in terms of optimally pacifying the trade-off in further financial development with respect to growth and employment,²⁴ there is still an incentive for the constrained actor to try to undermine regulations because, as Ferri/Minsky (1992: 88) note: “Effective constraints imply that both the expectations of gain and the objective possibilities of gain are smaller than the agent believes they would be if the constraints were removed”.

Figure 6: A stylised Minsky super-cycle



In Fig. 6, a stylised Minsky super-cycle covering the period after WW2 is portrayed. The first two decades – commonly dubbed the Golden Age of Western Capitalism – witnessed a period of relative stability in terms of macroeconomic development under the aegis of highly regulated national and international financial markets. The next decade and a half after the breakdown of the Bretton Woods system and two oil price crises showed a much higher volatility of both real and financial indicators such as GDP growth rates, exchange rates, stock exchange indices, etc. and became known as the period of ‘stagflation’. During this period, standard Keynesian stabilisation policy was replaced almost everywhere by supply-side policies and a first wave of financial liberalisation (e.g. the ‘Big Bang’ in the UK) took hold (see e.g. Williamson/Mahar 1998). The last two decades before the global financial crisis at the end of this Minsky super-cycle have been referred to as the ‘Great Moderation’ – relative economic stability and a slight increase in average growth rates are coupled with growing financialisation and a rather complete deregulation of financial markets (see Abiad/Detrageache/Tresselt 2008), culminating in the US subprime crisis, which eventually led to the severest economic downturn since the Great Depression of the 1930s.

restrictions of such models and so-called ‘black swan’ events (see Taleb 2007) were well-known, financial markets actors eagerly used such techniques.

24 Something which – as mentioned above – cannot be expected to occur in the real world and led Ferri/Minsky (1992:88) to formulate a ‘limitation upon performance’ theorem: “If there is an observation lag, and less than perfect adjustment by interventions, the system can never be in an optimal allocation alignment. This implies that the ‘practical best’ for an economy falls short of the abstract best.”

4. Conclusion

While Keynes was most concerned with analysing 'entrepreneur capitalism' as a monetary production economy, taking a static, equilibrium approach, Minsky's objective was more process-oriented, putting the evolution of financial structures at the centre of his 'Wall Street capitalism'. The process of financialisation, i.e. a gradual shift of accumulation from real to financial assets on the asset side of the balance sheet of non-financial firms, accompanied by an increasing liability-to-equity ratio on the finance side of the balance sheet, came as no surprise to either Keynes (see e.g. Guevara/Pierros/Fasianos 2019) or Minsky (see e.g. Whalen 2020). Yet Keynes did not pay too much attention to the challenge this process might pose to his analysis of a monetary production economy – i.e. 'casino capitalism' as opposed to 'entrepreneur capitalism'. In Minsky's 'Wall Street capitalism', however, financialisation is part of the process which endogenously renders capitalism unstable, yet Minsky does not provide a 'general theory of social provisioning'.

Combining Keynes's monetary production economy with Minsky's Wall Street economy and adding features of financialisation provides a 'general theory of financialised monetary production' as the basis of modern-day 'casino capitalism'. According to this paradigmatic view, nominal obligations are the economic basis of capitalism, implanting a growth imperative (in order to be able to pay interest) as much as endogenously created economic and financial instability in the short to medium term and a regulatory relaxation in the long term that eventually causes economic and financial turmoil on a greater scale. Additionally, casino capitalism's growth path is – even more so than that of earlier-stage 'entrepreneur capitalism' and clearly in opposition to the theoretical predictions of the mainstream real exchange economy – very likely to be considerably below its potential. What might be seen as favourable from an ecological point of view may pose considerable social problems when it comes with sustained mass unemployment, a huge loss of public resources and permanent pressure on institutions such as financial and welfare regulations and collective bargaining systems that help to keep societies together.

L. Randy Wray appears to believe that financial capitalism – or money manager capitalism as he terms it following Minsky – will eventually fade away after the end of a Minsky super-cycle ("What will replace money manager capitalism? Only time will tell"; Wray 2009: 826). Taking the Keynesian-Minskian perspective put forward here seriously, this is only to be expected when a fundamental change in understanding the laws of motion of capitalism has been established.

Literature

- Abiad, A., Detragiache, E., Tressel, T. (2008); A New Database of Financial Reforms, IMF Working Paper no. 266, Washington, DC.
- Agénor, P. (2019); Growth and Welfare Effects of Macroprudential Regulation, in: *Macroeconomic Dynamics*, Vol. 23, No. 8, pp. 3140-3162
- Arthur, K. N.A. (2017); The emergence of financial innovation and its governance - a historical literature review, in: *Journal of Innovation Management*, Vol. 5, No. 4, pp. 48-73
- Ball, R. (2009); The Global Financial Crisis and the Efficient Market Hypothesis: What Have We Learned?, in: *Journal of Applied Corporate Finance*, Vol. 21, No. 4, 8 - 16
- Bilginsoy, C. (2015); *A History of Financial Crises: Dream and Follies of Expectations*, Abingdon (: Routledge)
- Binswanger, M. (2004); How important are fundamentals? — Evidence from a structural VAR model for the stock markets in the US, Japan and Europe, in: *Journal of International Financial Markets, Institutions and Money*, Vol. 14, pp. 185–201
- Boyer, R. (2000); Is a finance led growth regime a viable alternative to fordism ? A preliminary analysis, in: *Economy and Society*, Vol. 29, No. 1, pp. 111-145
- Braun, B. (2021); Asset Manager Capitalism as a Corporate Governance Regime, in: Hacker, J. S., Hertel-Fernandez, A., Pierson, P., Thelen, K. (eds.); *American Political Economy: Politics, Markets, and Power*, New York: Cambridge University Press, pp. 270-294
- Bumann, S., Hermes, N., Lensink, R. (2013); Financial liberalization and economic growth: A meta-analysis, in: *Journal of International Money and Finance*, Vol. 33, pp. 255-281
- Caballero, R., J., Simsek, A. (2020); A Risk-Centric Model of Demand Recessions and Speculation, in: *Quarterly Journal of Economics*, Vol. 135, No. 3, pp. 1493–1566
- Cassidy, R. (2009); ‘Casino capitalism’ and the financial crisis; in: *Anthropology Today*, Vol. 25, No. 4, pp. 10 - 13
- Chancel, L., Piketty, T., Saez, E., Zucman, G. et al. (2022); *World Inequality Report 2022*, World Inequality Lab (available at: [0098-21 WIL RIM RAPPORT A4.indb \(wid.world\)](#))
- Chandler, A. D. jr. (1984); The Emergence of Managerial Capitalism, in: *Business History Review*, Vol. 58, No. 4, pp. 473-503
- Cheffins, B. (2015); Corporate Governance since the Managerial Capitalism Era, in: *Business History Review*, Vol. 89, No. 4, pp. 717-744
- Coddington, A. (1976); Keynesian Economics: The Search for First Principles, in: *Journal of Economic Literature*, Vol. 14, pp. 1258 - 1273
- Conard, A.F. (1988); Beyond Managerialism: Investor Capitalism?, in: *University of Michigan Journal of Law Reform*, Vol. 22, No. 1, pp. 117 - 178
- Coupey-Soubeyran, J. (2010); Financial regulation in the crisis regulation, market discipline, internal control: the big three in turmoil, in: *International Economics* Vol. 123, pp. 13-30
- Dalziel, P. (1999/2000); A Post Keynesian Theory of Asset Price Inflation with Endogenous Money, in: *Journal of Post Keynesian Economics*, Vol. 22, No. 2, pp. 227-245.
- Davidson, P. (1972); *Money and the Real World*, London (: McMillan)
- Davidson, P. (1994); *Post Keynesian Macroeconomic Theory. A Foundation for Successful Economic Policies for the Twenty-first Century*, Cheltenham
- Davidson, P. (2007); *John Maynard Keynes*, Houndsmill
- Dillard, D. (1955); The Theory of a Monetary Economy, in: Kurihara, K. (ed.); *Post-Keynesian Economics*, London (: Allen and Unwin), ch. 1
- Dillard, D. (1980); A Monetary Theory of Production: Keynes and the Institutionalists, in: *Journal of Economic Issues*, Vol. 14, No. 2, pp. 255-273
- Duménil, G., Levy, D. (2018); *Managerial Capitalism. Ownership, Management and the Coming New Mode of Production*, London

- Eggert, K. (2009); The Great Collapse: How Securitization Caused the Subprime Meltdown, in: Connecticut Law Review, Vol. 41, No.4, pp. 1257 – 1312
- Eggertsson, G. B., Krugman, P. (2012); Debt, Deleveraging, and the Liquidity Trap: A Fisher-Minsky-Koo Approach, in: The Quarterly Journal of Economics, Vol. 127, No. 3, pp. 1469–1513
- Epstein, G. (ed) (2005); Financialization and the world economy. Edward Elgar, Cheltenham
- Ferri, P., Minsky, H. P. (1992); Market processes and thwarting systems, in: Structural Change and Economic Dynamics, Vol. 3, Issue 1, pp. 79-91
- Fortier, D. (1989); Hostile takeovers and the market for corporate control, in: Economic Perspectives, Federal Reserve Bank of Chicago, Vol. 13, pp. 2-16
- Fox, J. (2009); The Myth of the Rational Market: A History of Risk, Reward, and Delusion on Wall Street, New York (: HarperCollins)
- Galbraith, J. K. (1997); Time to Ditch the NAIRU, in: Journal of Economic Perspectives, Vol. 11, pp. 93 - 108
- Greenwood, R., Scharfstein, D. (2013); The Growth of Finance, in: Journal of Economic Perspectives, Vol. 27, No. 2, pp. 3 - 28
- Guevara, D., Pierros, C., Fasianos, A. (2019); Recognition of early financialisation in the writings of John Maynard Keynes, in: Jespersen, J., Olesen, F. (eds.); Progressive Post Keynesian Economics, Cheltenham, pp. 86 - 95
- Guttman, R. (2008); A Primer on Finance-Led Capitalism and Its Crisis, in: Revue de la régulation, No.3/4
- Heine, M., Herr, H. (1996); Entkopplung oder Instabilität des Finanzsystems?, in: Hengsbach, F., Emunds, B., (eds.); Haben sich die Finanzmärkte von einer Realwirtschaft abgekoppelt?, Frankfurter Arbeitspapiere zur gesellschaftsethischen und sozialwissenschaftlichen Forschung Nr. 16, Philosophisch-Theologische Hochschule St. Georgen, Frankfurt/Main, pp. 50 - 69
- Heinsohn, G., Steiger, O. (2013); Ownership economics: on the foundations of interest, money, markets, business cycles and economic development, Abingdon (: Routledge)
- Heise, A. (1991); Tauschwirtschaft und Geldökonomie. Historiographie, Dogmengeschichte und positive Theorie der monetären Produktion, Frankfurt
- Heise, A. (2008a); Economic Governance and Employment. Policy, Polity and Politics of Economic Rise and Decline, Münster (: Lit Publ.)
- Heise, A. (2008b); The Political Economy of Meritocracy: A Post-Kaleckian, Post-Olsonian Approach to Unemployment and Income Inequality in Modern Varieties of Capitalism, in: Review of Radical Political Economics, Vol. 40, No. 1, pp. 67-88
- Heise, A. (2019); Post-Keynesian Economics – Challenging the Neo-Classical Mainstream, in: Efil Journal of Economic Research, Vol. 8, No. 2, pp. 8 - 29
- Herr, H. (2011); Money, Expectations, Physics and Financial Markets. Paradigmatic Alternatives in Economic Thinking, in: H. Ganssmann (ed.), New Approaches to Monetary Theory. Interdisciplinary Perspectives, Routledge, London
- Herr, H. (2013); An analytical framework for the Post-Keynesian macroeconomic paradigm, Working Paper, No. 23/2013, Hochschule für Wirtschaft und Recht Berlin, Institute for International Political Economy (IPE), Berlin
- Hirshleifer, D. (2001); Investor psychology and asset pricing, in: Journal of Finance, Vol. 56, pp. 1533–1598
- Jenkinson, N., Penalver, A., Vause, N. (2008); Financial innovation: what have we learnt?, in: Bank of England Quarterly Bulletin No. 2008 Q3, pp. 330 – 338
- Kregel, J. (1985); Hamlet without the Prince: Cambridge Macroeconomics without Money, in: The American Economic Review, Vol. 75, No. 2, Papers and Proceedings, pp. 133-139

- Karwowski, E., Shabani, M., Stockhammer, E. (2020); Dimensions and Determinants of Financialisation: Comparing OECD Countries since 1997, in: *New Political Economy*, Vol. 25, No. 6, pp. 957-977
- Keynes, J.M. (1936); *The General Theory of Employment, Interest and Money*, London
- Keynes, J.M. (1933a); A Monetary Theory of Production; in: *Der Stand und die nächste Zukunft der Konjunkturforschung: Festschrift für Arthur Spiethoff*, quote after: Moggridge, D. (ed.); *Collected Writings of John Maynard Keynes*, Vol. 13: *The General Theory and After, Part 1: Preparation*, London 1973, pp. 408 – 411
- Keynes, J.M. (1933b); A draft of chapter 2 from the last 1933 table of contents: 2. The Distinction between a co-operative economy and an entrepreneur economy; in: Moggridge, D. (ed.); *Collected Writings of John Maynard Keynes*, Vol. 29: *The General Theory and After, A Supplement*, London 1979, pp. 76 – 87
- Keynes, J.M. (1938); Letter to Hugh Townshend; in: Moggridge, D. (ed.); *Collected Writings of John Maynard Keynes*, Vol. 29: *The General Theory and After, A Supplement*, London 1979, pp. 293 - 294
- Kindleberger, C. P., Aliber, R. Z. (2005); *Manias, Panics, and Crashes A History of Financial Crises*, Hoboken N.J. (:Wiley & Son)
- King, R. G., Levine, R. (1993); Finance and Growth: Schumpeter Might Be Right, in: *Quarterly Journal of Economics*, Vol. 108, No. 3, pp. 681–737
- Kotz, D. M. (2011); Financialization and Neoliberalism. In Teeple, G., McBride, S. (eds.); *Relations of Global Power: Neoliberal Order and Disorder*, Toronto (: University of Toronto Press), pp. 1 - 18
- Lerner, J. (2006); The new new financial thing: The origins of financial innovations, in: *Journal of Financial Economics*, Vol. 79, pp. 223–255
- Libich, J., Lenten, L. (2022); Hero or villain? The financial system in the 21st century, in: *Journal of Economic Surveys*, Vol. 36, pp. 3–40
- Luttwak, E. (1998); *Turbo Capitalism. Winners and Losers in the Global Economy*, London (: Weidenfeld & Nicolson)
- MacKenzie, D. (2006); *An Engine, not a Camera: How Financial Models shape Markets*, Cambridge/Mass. (: Harvard University Press)
- Malkiel, B. (2012); The Efficient-Market Hypothesis and the Financial Crisis, in: Blinder, A. S., Lo, A. W., Solow, R. M. (eds.); *Rethinking the Financial Crisis*, Ney York (:Russell Sage Foundation), pp. 75 - 98
- Michell, J., Toporowski, J. (2013); Critical Observations on Financialization and the Financial Process; in: *International Journal of Political Economy*, Vol. 42, No. 4, pp. 67-82
- Miller, H. M. (1986); Financial Innovation: The Last Twenty Years and the Next, in: *The Journal of Financial and Quantitative Analysis* , Vol. 21, No. 4, pp. 459-471
- Minsky, H. P. (1975); *John Maynard Keynes*, New York (McGraw-Hill)
- Minsky, H. P. (1980); Capitalist Financial Processes and the Instability of Capitalism, in: *Journal of Economic Issues*, Vol. 14, No. 2, pp. 505 - 523
- Minsky, H.P. (1986); *Stabilizing an Unstable Economy*, New Haven
- Minsky, H.P. (1993), Schumpeter and finance, in: Biasco, S., Roncaglia, A., Salvati, M. (eds); *Market and Institutions in Economic Development: Essays in Honour of Paulo Sylos Labini*, New York (: St. Martin’s Press), pp.
- Nasica, E. (1999); Thwarting systems and institutional dynamics or how to stabilize an unstable economy, in: Davidson, P., Kregel, J. (eds.), *Full Employment and Price Stability in a Global Economy*, Cheltenham (: Edward Elgar), pp.236-255

- Orhangazi, Ö. (2008); Financialisation and capital accumulation in the non-financial corporate sector: a theoretical and empirical investigation on the US economy: 1973–2003; in: Cambridge Journal of Economics, Vol. 32, No. 6, pp. 863–886
- Palley, T. (1998); Plenty of Nothing. The Downsizing of the American Dream and the Case for Structural Keynesianism, Princeton (: University Press)
- Palley, T. (2012); A Theory of Minsky Super-Cycles and Financial Crises, in: Contributions to Political Economy, Vol. 30, pp. 31–46
- Palley, T. (2021); Financialization revisited: the economics and political economy of the vampire squid economy, Post Keynesian Economics Society, Working Paper No. 2110
- Perold, A. F. (2004); The Capital Asset Pricing Model, in: Journal of Economic Perspectives, Vol. 18, No. 3, pp. 3–24
- Posner, R. A. (2009); A Failure of Capitalism: The Crisis of '08 and the Descent into Depression, Boston (: Harvard University Press)
- Rajan, R. G., Zingales, L. (1998); Financial Dependence and Growth, in: American Economic Review, Vol. 88, No. 3, pp. 559 – 86.
- Richter, B., Schularick, M., Shim, I. (2019); The costs of macroprudential policy, in: Journal of International Economics, Vol. 118, pp. 263-282
- Riese, H. (1986); Theorie der Inflation, Tübingen
- Roncaglia, A. (2013); Hyman Minsky's monetary production economy , in: PSL Quarterly Review, Vol. 66, No. 265, pp. 77-94
- Shiller, R. J. (2000); Irrational Exuberance, Princeton (: University Press)
- Steward, I. (2012); 17 Equations that changed the World, London (: Profil Books)
- Stockhammer, E. (2004); Financialisation and the slowdown of accumulation, in: Cambridge Journal of Economics, Vol. 28, No. 5, pp. 719-741
- Stockhammer, E. (2005); Shareholder value orientation and the investment-profit puzzle, in: Journal of Post Keynesian Economics, Vol. 28, No. 2, pp. 193-215
- Strange, S. (1986); Casino Capitalism, Oxford (: Blackwell Publ.)
- Taleb, N. N. (2007); The Black Swan. The Impact of the highly improbable, New York (: Random House)
- Tomaskovic-Devey, D., Lin, K.-H., Meyers, N. (2015); Did financialization reduce economic growth?, in: Socio-Economic Review, 2015, Vol. 13, No. 3, pp. 525–548
- Townshend, H. (1938); Letter to J.M. Keynes, in: Moggridge, D. (ed.); Collected Writings of John Maynard Keynes, Vol. 29: The General Theory and After, A Supplement, London 1979, pp. 289 - 293
- Tsaliki, P., Tsoulfidis, L. (2021); Financialization Historically Contemplated, MPRA Paper No. 113634 (Online at <https://mpra.ub.uni-muenchen.de/113634/>)
- van Treeck, T. (2012); Financialization; in: King, J. (Hrsg.) The Elgar Companion to Post Keynesian Economics, Second Edition, Northampton, pp. 219 - 223
- Whalen, C. J. (2020); Understanding Financialisation; Standing on the Shoulders of Minsky, in: Beker, V. A. (ed.); Alternative Approaches to Economic Theory, Abingdon (: Routledge), pp. 185 - 206
- Williamson, J., Mahar, M. (1998); A Survey of Financial Liberalization, Essays in International Finance, Princeton University
- Wray, L. R. (2009); The rise and fall of money manager capitalism: a Minskian approach, in: Cambridge Journal of Economics, Vol. 33, No. 4, pp. 807–828
- Zhou, L., Yang, C. (2019); Stochastic investor sentiment, crowdedness and deviation of asset prices from fundamentals, in: Economic Modelling, Vol. 79, pp. 130-140

