

Uncertainty, modern financial market and the real economy

Fernando Ferrari Filho¹
Fábio Henrique Bittes Terra²

Abstract: In general, mainstream economics defines a situation of risk as one in which individuals take a decision based on numerical probabilities of all outcomes that are related to that decision. Given that, the mainstream economists use to argue that the financial market is subject to the efficient market theory (EMT). On the other hand, Keynes and the Post Keynesians reject the EMT because the future is characterized by fundamental uncertainty. According to them, because uncertainty exists, individuals have heterogeneous expectations, and, as a result, their decisions involve either the accumulation of wealth or the possession of liquidity. Considering the difference between both theoretical approaches, the chapter has two objectives: the first one is to show that, once “speculation is the activity of forecasting the psychology of the market”, in an entrepreneur economy, the organization of financial market, given uncertainty, faces a severe trade-off between liquidity and speculation; and, the second one is to show the links between financial market and the real economy.

Key Words: Risk, Uncertainty, Financial market, Keynes, Post Keynesians, Entrepreneur Economy.

1. Introduction

As is commonly known, Keynes’ primary legacy consists in demonstrating the logic of a monetary economy. In such an economy, fluctuations in effective demand and employment occur because, in a world in which the future is uncertain and unknown, individuals may prefer to retain money, postponing consumption and investment. In Keynes’ words, in a monetary production economy “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 in the short, without a knowledge of money between the first state and the last” (Keynes 1973, pp. 408-409).

Thus, one central question in the Keynesian theory concerns the relationship between uncertainty, money, and unemployment. Going in this direction, Post Keynesian theory recovers this fundamental Keynesian insight: fluctuations in effective demand and in employment are related to the liquidity preference of individuals seeking safeguards against uncertainty. It is for this reason that Post Keynesians develop a

¹ Retired Professor of Economics at Federal University of Rio Grande do Sul, and Researcher at National Council for Scientific and Technological Development, Brazil.

² Associate Professor at Federal University of ABC, and Researcher at National Council for Scientific and Technological Development, Brazil.

theoretical structure in which the Keynesian revolution is studied within the context of a monetary theory of production (Carvalho 1992). Minsky (1975), for instance, explains how economic cycles are conditioned and aggravated by financial cycles, so that “financial relations are major determinants of the behaviour of a capitalist economy” (Minsky 1975, p.6).

Taking into consideration Minsky’s idea, this chapter aims at exploring the relationship between the financial market and the decision of investment and, as a consequence, the expansion of economic activity. To achieve this objective, first it presents the main characteristics of agents’ asset portfolio composition based on the concepts of risk and uncertainty. More specifically, it shows that, on the one hand, according to the mainstream economics, risk is a situation where agents take decisions relying on numerical probabilities of all outcomes that are related to that decision. Thus, economists who follow this theoretical approach argue that the financial market is subject to the efficient market theory (EMT).³ On the other hand, Keynes and Post Keynesians reject the EMT because the future is dominated by fundamental uncertainty. According to them, because uncertainty exists, agents have heterogeneous expectations. Thereby their decisions involve either the accumulation of wealth or the possession of liquidity. Second, in a context of fundamental uncertainty, the organization of financial market faces a severe trade-off between liquidity and speculation. Considering that, the chapter shows how financial market affects (boosting or slumping) the economic activity. In other words, it describes the *modus operandi* of a monetary theory of production.

Besides this Introduction, the chapter is divided as follows: Section 2 presents the idea of risk and explores the notion of uncertainty; section 3 shows the relationship between the financial market and the real economy; and the last section summarizes.

2. Financial market: risk *vis-à-vis* uncertainty

One key feature of the Keynesian revolution was the insertion of uncertainty, and its counterpart expectations, in the realm of the economic theory. Before Keynes’ *The General Theory of Employment, Interest and Money* (hereafter GT), in which expectations play a major role on the economic dynamics, uncertainty was not a variable that the economic mainstream regarded. However, after Keynes, uncertainty and

³ It is important to mention that according to the conventional approach (or EMT) financial risk can be classified into three types of risk: market, credit and liquidity.

expectations were never more unconsidered, though the way the modern mainstream economics considers them is, from a Post Keynesian point of view, a matter of risk, not of uncertainty.

The difference between risk and uncertainty is due to Knight (1921) and Keynes (1973). Risk means that the outcome of a decision resides within a closed and known set, therefore it is possible to estimate the probability of a particular result and there is no uncertainty. For instance, “[t]he game of roulette is not subject, in this sense, to uncertainty [...] Or [...] the expectation of life is only slightly uncertain. Even the weather is only moderately uncertain.” (Keynes 1973, p.113).

Although the mainstream models try to deal with uncertainty and expectations, what they really regard is risk. One of the pillars of EMT is the Rational Expectations Hypothesis. It establishes that agents are capable of knowing the distribution of events in space and in time so that they do not commit mistakes when outlooking some future possible outcomes of their present actions. As Davidson (1994) states, ergodicity prevails within the Rational Expectations Hypothesis.⁴

Keynes (1921, 1973) and the Post Keynesians do not see risk as the same thing as uncertainty. Uncertainty is the impossibility of calculating and knowing the future outcomes of a decision. As Keynes (1973, pp.113-114) describes it,

“by ‘uncertain’ knowledge, let me explain, I do not mean merely to distinguish what is known for certain from what is only probable [...] The sense in which I am using the term is that in which the prospect of a European war is uncertain, or the price of copper and the rate of interest twenty years hence [...] About these matters there is no scientific basis on which to form any calculable probability whatever. We simply do not know.”

Ferrari Filho & Terra (2016) argue that the first incursion Keynes did in the matter of uncertainty was his 1921 *A Treatise on Probability*. In this book he developed an epistemologic theory aiming at giving validity to the reasoning that was proven mistaken. Keynes argues that the thoughts that conveyed to the wrong conclusion were

⁴ The EMT has its foundation in the ergodic axiom, which means that the expected value of an objective probability can be always estimated from observed data that provides reliable information about the conditional probability function that will govern future outcomes. For additional details, see: Davidson (2002).

rational and that they reached a mistaken end because of uncertainty: “But is it certain that Newton and Huyghens were only reasonable when their theories were true, and that their mistakes were the fruit of a disordered fancy?” (Keynes 1921, p. 284).

Keynes (1921) establishes that the first step of obtaining knowledge is direct acquaintance. It means that using their natural skills, agents can acquaint with meanings, experiences and feelings and these abilities enable them to collect data that they assume to be known. This data is the direct knowledge, the second step of gaining knowledge. Human reasoning uses it to form what Keynes (1921) called indirect knowledge (the third and final step of obtaining knowledge), an idea about something that does not actually exist, an expectation.

As the set of direct knowledge does not include the reasoned indirect knowledge, the latter is always uncertain. Thus, the set of direct knowledge can never have the future outcome of a decision, because any outcome exists when the decision is taken. So, the data available for making a decision is always incomplete, making uncertainty fundamental: there will always be some relevant data missing when someone decides.

To Ferrari Filho & Terra (2016) uncertainty has two natures. The epistemological one derives itself from Keynes (1921). It depends on human beings' incapacity of reasoning all relevant data upon which decide. Human beings have a limited capacity of reasoning and so it is impossible to estimate all the possible future scenarios. Based on Davidson (1994, 2002), the other nature of uncertainty is the environmental one. The environment is unable to offer sufficient data to back an outlook of possible results. Not even time is able to furnish the data able to form a perfect idea of the future, because events do not tend to set around averages values in time or in space, that is, non-ergodicity overrules. Ferrari Filho & Terra (2016) argues that both uncertainties reinforce themselves and form the nature of uncertainty in the Post Keynesian theory.

Following Dequech (2000), two types of uncertainty exist. On the one hand, there is the fundamental uncertainty, the one described above that runs from both individuals being epistemologically incapable of accessing and assessing all relevant data to take a decision and the environment not supplying all data necessary for a perfect decision. On the other hand, some results happen within a finite set; still, the range of values it can take on is immense, and the values it assumes change a lot over time. This uncertainty is called ambiguity by Dequech (2000), while Lavoie (2014) calls it probability uncertainty.

As uncertainty is an indelible feature, agents create several institutions to deal with it, like laws, norms, and culture. When it comes to the economic system, money is the insurance against uncertainty and the bad expectations that may come along with it when the outlooks of future are doubtful. This is the essence of Keynes' (2007) liquidity preference theory. Whenever distrustful expectations hover, agents desire to keep their wealth in its most secure and liquid form, namely money, saving it as a store of value.

In Keynes' (1973, 2007) monetary economy of production, the accumulation of wealth is the logic of the economic system. However, this accumulation depends on individuals yielding on interest-bearing financial investments or profiting on productive investments. The latter are based on individuals buying capital goods in the present because of their good expectations of future returns. These capital goods are illiquid and it is impossible to buy them with a fixed income. In turn, financial assets have a number of demandants in well-organized secondary markets so that they are liquid. Also, their deals can contract a fixed income, letting it clear to individuals what their gains will be.

Hence, when individuals are deciding how to accumulate wealth over time, they regard a broad set of purchaseable financial and real assets. Given uncertainty, the decision of what to buy strongly depends on agents' expectations. Better and confident outlooks motivate them to buy capital goods whereas doubtful and unconfident prospects stimulate the acquisition of liquid financial assets.

The first step in a decision process is whether to hold money precautionarily or not. If the decision is to put money into movement, the speculative demand for money comes into play, and the second step that individuals take is to analyze the returns offered by liquid financial assets, going from the more secure fixed income ones to riskier securities paying variable returns. In the second step individuals are into the domain of the speculative demand for money. They bet on knowing better than the others agents what the market conditions are going to be in the future. This is the sphere of speculation, as Keynes (2007) defines it, the area where agents try to profit without facing the obscurity that uncertainty places in future outcomes.

Individuals only buy illiquid capital goods, the third step of an investment decision, whose returns are always unpredictable, after pricing the conditions of gaining in the financial markets. To fulfil their desire of wealth accumulation by purchasing capital goods and engaging themselves into entrepreneur activity individuals must have a good confidence in their expectations. However, jobs and income creation in monetary economies of production are determined by investments in capital goods.

Thus, the harder it is for investments to be undertaken, the lower is the GDP growth and the higher is the unemployment level.

Notwithstanding how hard it is to have a sustainable dynamics of productive investment because of its illiquidity and the high level of uncertainty that surrounds it, another element that has worsened buying capital goods is the intense development of assets in the connected, deregulated and globalized modern financial markets. A big range of financial assets makes longer the way of a decision in favor of capital goods.

As Carvalho (2015a) argues, the habitual behavior of individuals is to prefer the safety of liquidity. This defensive behavior, as Carvalho (2015a) calls it, gained a huge potential with the flourishing of a vast series of financial assets offered in the modern deregulated financial markets. The outcomes of this financialized economy are, on the one hand, more hindrances to sustain an economic dynamics that guarantee stable jobs and a regular creation of income. On the other hand, the raid of the economic system into financial crisis has never been so common, like illustrate the 2001 Nasdaq Crisis, the 2007-2008 Subprime Crisis, and the post-2017 debate about how to manage Fed's Balance without causing any run to quality.

Financial assets have several risks, yet they can offer gains in the short term, and they are very liquid as most of them have well organized secondary markets, a feature capital goods are unable to have. Thus, uncertainty has crescently been finding safety in financial assets. However, various factors of the modern financial markets, such as leverage, price volatility, short term speculation, have increased uncertainty in the financial market, and this is very diferent from EMT's risk, which would say that agents would learn over time and stop making mistakes. They cannot learn. Also, their defensive behavior tends to make them feel more fear than excitement, and so they stay the closest they can of liquidity. So, speculation tends to frenquently and quickly oscillates only between money and financial assets. But, as Keynes (1976) states, agents' preference for liquidity can largely affect productive investments, and so they are not neutral to the real economy.

The link between the financial market and real economy is explored in the next section.

3. The financial market and the real economy in a Keynesian perspective

Keynes, in the 1930s, developed his monetary theory of production, also called an entrepreneur economy, in which the principle of effective demand (PED) is essential.

It determines the employment and output levels, and is strictly related to non-neutrality of money, both in the short and the long terms. Keynes explains the relationship between the effective demand and the non-neutrality of money as follows: “Money is *par excellence* the means of remuneration in an entrepreneur economy which lends itself to fluctuations in effective demand.” (Keynes 1979, p. 86). In other words, in Keynes’ monetary theory of production, money is the starting and the ending points of the economic process. The following quotes express this idea:

“[...] the entrepreneur is guided, not by the amount of product he will gain, but by the alternative opportunities for using money having regard to the spot and forward price structure taken as a whole.” (Keynes 1979, p. 83).

“[a monetary theory] is 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 in the short, without a knowledge of the behaviour of money between the first and the last.” (Keynes 1973, pp. 408-409).

Implicitly, the quotes above illustrate that the reason for fluctuations in effective demand is holding money, because of the uncertainty concerning the future. More specifically, considering that, within fundamental uncertainty, entrepreneurs and households do not know the future outcomes of their current decisions, they can decide either to retain money or buy liquid financial assets. Thus, the concept of money’s non-neutrality has to do with the decision process of agents in the light of fundamental uncertainty.

Moreover, in a monetary theory of production, the financial market has a relevant role in the economic process. Arestis & Terra (2017, p. 48) present the following reasons for this:

“First, besides the central bank, banks [...] are the other grand players of the financial markets; partly due to their capacity to create money, partly because they are the greatest intermediaries from which the agents can have access to the financial system. Second, the fact that

banks grant finance without the requirement of previous savings explains the endogenous nature of money, which is of fundamental importance to monetary policy.”

To sum up, according to the monetary theory of production, the capitalist system is an economy where “expenditure [mainly investment] creates its own income” (Keynes 1979, p. 81). In this economy, the insufficiency of effective demand occurs because agents, in conditions of fundamental uncertainty, prefer to hold money or other liquid assets instead of acquiring goods produced by labor. Thus, the liquidity preference inhibits economic agents’ spending decisions and it affects the economic activity.

How does Keynes develop his monetary theory of production? Implicitly, he develops his theory in *A Treatise on Money (Treatise)*, published in 1930, and in his 1936 GT.

In the first volume of his *Treatise*, Keynes elaborates an “asset choice theory” which aims at

“[...] describing, not merely the characteristics of static equilibrium, but also those of disequilibrium, and to discover the dynamical laws of governing the passage of a monetary system from one position of equilibrium to another [...] and] also describ[ing] the salient features of modern banking and monetary systems [...]” (Keynes 1976, p. v).

Keynes’ “asset choice theory” aims to show how, in a context of uncertainty in which agents’ expectations⁵ always change, the financial market works in terms of stimulating (or not) the economic activity. That is, Keynes presents an institutional framework of the financial market as the main cause of disruption in the real economy.⁶

To develop his idea, Keynes divides the economic system into two categories: industrial and financial circulations. According to Keynes (1976, p. 243, original italics):

⁵ According to Keynes, the agents’ expectations can be bear and bull. In his words, Keynes (1976, p. 250) defines “a ‘bear’ [...] is one who prefers at the moment to avoid securities and lend cash, and correspondingly a ‘bull’ is one who prefers to hold securities and borrow cash [...]”

⁶ It is important to mention that in *A Tract on Monetary Reform* (Keynes 1971), published in 1923, Keynes shows that changes in money supply (that is, financial system deposits) could not only explain the fluctuations in the price levels but also the production and employment levels, at least in the short term.

“By *Industry* we mean the business of maintaining the normal process of current output, distribution and exchange and paying the factors of production their incomes [...]. By *Finance*, on the other hand, we mean the business of holding and exchanging existing titles to wealth [...] including Stock Exchange and Money Market transactions, speculation and the process of conveying current savings and profits into the hands of entrepreneurs.”

More specifically, the industrial circulation refers to the volume of money held by individual and firms in order to expand consumption and investment. The latter is the amount of wealth held by agents with the purpose of saving and financial speculation.

Given these definitions, Keynes explains the causality between the two economic spheres: the industrial circulation is determined by the investments of firms and households; the financial market provides bank loans (credit) to undertake the real sector transactions. Therefore, Keynes shows that banks (financial market as a whole) plays an institutional role in the economy, because their deposits/liabilities fund the real economy. According to him, given that the outcomes of a monetary economy are inherently uncertain, when the financial market becomes more prudent – that is, banks decide to revise their lending behaviour to firms –, the main result is that industrial circulation of capital is discouraged and, in this situation, “a state of unemployment may be expected to ensure, and to continue [...]” (Keynes 1976, p. 206). Thus, as Keynes (1976, p. 254) explains:

“changes in the financial situation are capable of causing changes in the value of money in two ways. They have the effect of altering the quantity of money available for the Industrial Circulation; and they may have the effect of altering the attractiveness of Investment [...]; whereas if it refuses to increase the volume of Bank-money, it may so diminish the amount of money available for Industry, or so enhance the rate of interest at which it is available, as to have an immediately deflationary tendency.”

To conclude, the main idea of the *Treatise* is that: money and the financial market (what Keynes called financial circulation of capital) are important to understand the development of the real economy and the fluctuations in the levels of prices and employment, (*i.e.*, they affect the industrial circulation of capital).

In the GT, Keynes develops the PED, emphasizing the idea of the non-neutrality of money.⁷ According to the PDE, the insufficiency of effective demand occurs because agents, in conditions of uncertainty, prefer to hold money or other liquid assets (liquidity preference⁸), instead of taking investment decisions.

In sum, taking into consideration the PDE Keynes presents an “investment theory of cycle” in which economic crises come about because money is an alternative form of wealth. Moreover, uncertainty is the reason for retaining money: the greater the uncertainty surrounding the expectations of agents, the more they might postpone spending decisions, and, consequently, the greater the liquidity preference.

Chapters 11 and 12 of the GT show, implicitly, how speculative behaviour of agents (households, firms and banks) contributes to stimulate their liquidity preference, as well as they connect the financial market and the real economy.

Initially, it is important to mention that speculation is essentially an “activity of forecasting the psychology of the market” (Keynes 2007, p. 158).⁹ In an entrepreneur economy, the organization of financial market bears a severe trade-off between liquidity and speculation: on the one hand, the financial market encourages the development of productive activities, providing liquidity to consumers and entrepreneurs; on the other hand, it increases the possibility of speculative gains, which involves the ability to buy and readily resell financial assets for cash. By the way, the latter facilitates the use of financial assets to finance investments as soon as they can encourage savers to provide

⁷ In chapter 17 of GT, Keynes showed that money is not neutral because it differs from other assets due to the following properties: first, the elasticity of money production is zero – that is, money is not produced by the quantity of labor the private sector employs in the productive process. Second, the substitution-elasticity of money is also zero, so it is not substituted by any other asset when its price changes. Third, the carrying cost of money is zero as the cost of life in monetary terms is kept stable over time.

⁸ According to the liquidity preference theory (GT, chapter 15), the demand for money depends on the transaction, precautionary and speculative motives. The last one plays an important role in the economy, because “a change in circumstances or expectations will cause some realignment in individual holdings of money.” (Keynes 2007, p. 198).

⁹ According to Kaldor (1980), speculation is the act of purchasing an asset with the intention of reselling it later, at higher prices, in the expectation of favorable changes taking place in the relevant markets. The role of the speculator is essential in these markets, because he/she can take the risks of acting against the market in anticipation of future movements in the price of assets; *i.e.*, his/her behavior can stabilize or not the price of assets, depending on the range of price oscillations.

the necessary funding that stimulates investors to spend their monetary resources on new investment projects.

In Chapter 11 Keynes shows that the volume of investment involves two types of risk: the entrepreneur's and lender's risks. According to Keynes (2007, p. 144),

“[t]he first one [...] arises out of doubts in his own mind as to the probability of his actually earning prospective yield for which he hopes [...] second type of risk [is related to] the possible insufficiency of the margin of security [...]”

The above quote brings Keynes' idea that there are close connections between the financial market and the real economy. One of these connections is the impact of speculation on productive activity, especially on investment.

More specifically, as speculators dominate the financial market, its stability requires a larger number of speculators with different opinions (bull and bear expectations). However, although the liquidity of financial market often facilitates, it can sometimes impede the course of a new investment, because “[i]n the absence of security markets, there is no object in frequently attempting to revalue an investment to which are committed” (Keynes 2007, p.151).

What is the problem of this connection? It is when speculation predominates over the economic activity. As Keynes (2007, p. 159) states:

“[...] the position is serious when enterprise becomes the bubble on a whirlpool of speculation. When the capital development of a country becomes a by-product of the activities of a casino, the job is likely to be ill-done.”

Echoing Keynes' idea for the years 2000, in a context where the global economy is increasingly deregulated and integrated, the financial market became a great casino and, as a consequence, speculation has been disruptive. Thus, the institutional design of the financial market built from the 1970s to the 1990s determined its potential as an environment where speculation can easily flourish.

As is well known, one of the keys of the Post Keynesian approach is to understand the *modus operandi* of a system of borrowing and lending based upon

margins of safety. In other words, the idea is to show that, in a context of fundamental uncertainty about the future, borrowers (households and firms) and lenders (mainly banks) take precautions (margins of safety) to mitigate the systemic risk they are exposed to.

Going in this direction, Minsky, for instance, based on Keynes' GT,¹⁰ elaborates his "financial fragility hypothesis" (FFH). The idea is to explain how economic cycles are conditioned and aggravated by financial cycles. Thus, he develops a "financial theory of investment" to show that capitalist economies have a system of borrowing and lending based upon margins of safety.

Carvalho (2015b) summarizes Minsky's theory in two theorems: first, according to the FFH, the economy has stable and unstable financing regimes; second, stability is destabilizing. Exploring the second one, Minsky argues that the existence of a prolonged period of economic prosperity brings "[t]he economic instability [... that] is the result of the fragile financial system that emerge[s] from cumulative changes in financial relations and institutions" (Minsky 2008, p. 5). Minsky's FFH can be explained as follows:

- (i) From Keynes (2007), the first step of the entrepreneur's decision-making process is the estimation of the internal rate of return of investment plans, that is, the marginal efficiency of capital. If the return rate of a capital asset is greater than the minimum acceptable rate of return offered by other assets, particularly low-risk and fixed income – financial assets, an investment is usually made.
- (ii) Funding is fundamental for investments and, in general, firms can issue equities and/or borrow money not only by selling bonds, but by contracting loans from banks. Different from sharing equities, borrowing entails liabilities that firms pay back only if they collect their planned revenues.
- (iii) From the relation between the expected revenues and the financial obligations of an economic unit, Minsky defined three financial postures, corresponding to different degrees of fragility: (a) *Hedge* financing posture is the safest one. This unit has a reasonable safety margin between returns and financial payments; (b) *Speculative* financing posture is the intermediate financial fragility stance. It means that revenues

¹⁰ According to Minsky (2008, p. 111), "[t]he essential aspect of Keynes's *General Theory* is a deep analysis of how financial forces – which we can characterize as Wall Street – interact with production and consumption to determine output, employment, and prices."

cover financial commitments only partly, and, as a result, the firms at this position need to roll over their liabilities/debts; and (c) *Ponzi* financing posture is the one in which the unit fails to raise sufficient revenue to pay even its operating costs. This unit cannot produce safety margins by means of its yields and the only way it builds up safety margins is restructuring itself.

Given that, a question arises: How do *Ponzi* units come about? Considering that economies are inherently cyclic, alternating booms and recessions, in an economic prosperity revenues and production grow and capital gains increase. Thus, based on a conventional reasoning that the good current conditions will repeat in the future, entrepreneurs are encouraged to develop new business plans and to raise funding to carry them out. Meanwhile, banks' revenues also rise, and they are ready to meet entrepreneurs' loan demand. The economy thus leans into higher-risk overall stance, moving from *Hedge* to *Speculative*. Furthermore, units become leveraged, modifying banks' risk assessments. Thus, credit becomes tighter, new investments are not made, revenues no longer grow, and *Speculative* units turn fast and involuntarily into *Ponzi* positions, intensifying the possibility of an economic crisis. Carvalho (2015b, p. 107) summarizes this idea:

“Leverage, thus, grows during prosperity phases, intensifying and accelerating growth and prosperity itself. However, increasing leverage means also increasing fragility. With lower and lower margins of safety, lenders become more and more exposed to shocks that could be small and fundamentally harmless under ordinary circumstances [...].”

Concluding this section, Post Keynesians, especially Minsky, show that *Speculative* and *Ponzi* booms occurs when prolonged stability is experienced, and finance and speculation dominate enterprise. The following quotes express this argument:

“[...] increasing fragility is a natural result of the way the system operates.” (Carvalho 2015b, p. 108).

“Our economy is unstable because of capitalist finance.” (Minsky 2008, p. 244).

4. Final remarks

The main goal of the chapter was to show, in a Keynesian perspective, the relationship between the financial market and the real economy.

To achieve this goal, first, it was presented the difference between risk and uncertainty. Thus, Section 2, on the one hand, showed that EMT understands uncertainty as risk and so the mainstream economists believe that future can be predictable known. On the other hand, Keynes and Post Keynesian think of risk as a very particular case, linked to almost none economic transaction. Uncertainty is an indelible feature of reality and it strongly imposes itself over the economic system. Going in this direction, for instance, the frequent financial and exchange rate crises that happen in the global economy after the 1970s, when financial markets became deregulated and integrated, corroborate that risk is not what prevail, uncertainty is the case.

Second, after defining Keynes' monetary theory of production, in which money and financial assets play an important role on the economic system, Section 3 showed that the relationship between the financial market and the real economy is inherently unstable. Based on Keynes' "investment theory of cycle" and Minsky' "financial theory of investment", it was shown that "stability is destabilizing". In other words, booms and busts occur because agents (entrepreneurs and consumers) take high-risk leverage and lending practices, but they get off them shortly, when their expectations outlook bad future scenarios, pushing the economy into a slump.

References

- Arestis, P. and F.H.B. Terra (2017), 'Monetary policy in the Post Keynesian theoretical framework', *Brazilian Journal of Political Economy*, 37(146), pp.45-64, January-March.
- Carvalho, F.J.C. (1992), *Mr Keynes and the Post Keynesians*. Aldershot: Edward Elgar.
- Carvalho, F.J.C. (2015a), 'Keynes on expectations, uncertainty and defensive behaviour', *Brazilian Keynesian Review*, 1(1), pp. 44-54.
- Carvalho, F.J.C. (2015b), *Liquidity Preference and Monetary Economies*. New York: Routledge.
- Davidson, P. (1994). *Post Keynesian Macroeconomic Theory*. Aldershot: Edward Elgar.
- Davidson, P. (2002), *Financial Markets, Money and the Real World*. Cheltenham: Edward Elgar.

- Dequech, D. (2000), 'Fundamental uncertainty and ambiguity', *Eastern Economic Journal*, 26(1), pp. 41-60.
- Ferrari Filho, F. and F.H.B.Terra (2016), 'Reflexões sobre o método em Keynes', *Brazilian Journal of Political Economy*, 36, 1(142), pp. 70-90.
- Kaldor, N. (1980), *Essays on Economic Stability and Growth*. New York: Hommer & Maier.
- Keynes, J. M. (1921), *Treatise on Probability*. London: The Macmillan Press
- Keynes, J.M. (1971), *A Tract on Monetary Reform*. London: The Macmillan Press.
- Keynes, J.M. (1973), *The General Theory and After: Preparation*. Cambridge: Cambridge University Press.
- Keynes, J.M. (1976), *A Treatise on Money: The pure theory of money*. New York: AMS Press.
- Keynes, J.M. (1979), *The General Theory and After: A supplement*. Cambridge: Cambridge University Press.
- Keynes, J.M. (2007), *The General Theory of employment, Interest and Money*. London: Palgrave Macmillan.
- Knight, F. (1921), *Risk, Uncertainty and Profit*. University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship. Available at SSRN: <https://ssrn.com/abstract=1496192>. Accessed in August 2.
- Lavoie, M. (2014), *Post Keynesian Theory: New Foundations*. Cheltenham: Edward Elgar.
- Minsky, H. (1975), 'Financial resources in a fragile financial environment', *Challenge*, 18(3), pp. 6-13.
- Minsky, H. (2008), *Stabilizing an Unstable Economy*. New York: McGraw Hill.