

Financing of private investment in the view of Keynes-Minsky

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Abstract: The primary goal of this paper is to analyze the financing of investment and its effects on the structure of liabilities and the portfolio of a company or family and the pace of financing corporate investment assets, taking as a basis for this understanding of Keynes and Minsky. This will be described a vision of the relations of financial capitalism in terms of cash flow, and analyzed how they are related to the valuation of assets and financing of positions in the portfolio and, finally, the assumptions and elements should be implemented microeconomic analysis to macroeconomic analysis by aggregation method.

Keywords: Financing of investments. Keynes and Minsky. Financial capitalism.

JEL Classification: E00. E12. E62.

Financiamento de investimento privado na visão de Keynes-Minsky

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Resumo: O objetivo fundamental do presente artigo é analisar o financiamento dos investimentos e seus efeitos sobre a estrutura de passivos e de ativos do portfólio de uma empresa ou família e o ritmo do financiamento dos investimentos das empresas, tendo como base para isso o entendimento de Keynes e Minsky. Para isso, será descrita uma visão das relações do capitalismo financeiro em termos de fluxo de caixa, e analisa-se como estão relacionados à valorização dos ativos e o financiamento das posições do portfólio. Por fim, deverão ser transpostas as hipóteses e os elementos da análise microeconômica à análise macroeconômica pelo método da agregação.

Palavras-chave: Financiamento dos investimentos. Keynes e Minsky. Capitalismo financeiro.

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I Introduction

It is in section IV of chapter 11 of the *General Theory*, where they outlined the foundations of a theory of private investment in capitalism, Keynes emphasized the importance of financing investment in an economy with a modern financial system. Although Keynes did not enter into the technical details of how funding affects the investment and therefore the behavior of the economy, the issue of funding wins a very special importance. Indeed, the association of the relationship between funding and investment is made by Keynes through two types of financial risks – often not differentiated, but should be distinguished – that affect the volume of private investment spending.

Keynes had already dealt with the financial institutions in his *Treatise on Money (TM)*, so maybe this question has not developed in the *General Theory*, as it deserves. Nevertheless, there are enough elements in the *General Theory*, and in other writings of Keynes, which allows us, following the trail of Minsky, organize the main ideas about the problem of financing the investment in a monetary production economy in which financial institutions are in an advanced state of organization. Minsky notes that, except in some passages and quotes, Keynes did not develop a theory of the evolution of the structure of liabilities of companies, banks and other

financial institutions, and takes place as the endogenous generation of money and your financial closer substitutes.

This article is organized into three sections: first, the types of risks and the safety margin of financing of private investments as well as asset prices, in the second, we discuss the microeconomics of investment financing from the point of view of valuation of assets and financing of portfolio positions, and the third, we discuss the macroeconomics of financing with the transposition of assumptions and elements of microeconomic analysis to macroeconomic level of aggregation.

2 Margin of safety risks and finance private investment

Keynes identifies three types of risks when a businessman accessing credit from a bank. The first is the risk of the entrepreneur or the risk of the borrower and this arises the doubt that it has on the likelihood of getting really expected retribution your business in the future. "It is clear that if the entrepreneur risks his own capital financing new investment, this is the only risk that is relevant to him", Keynes (1982, p. 121, own translation) recalls. To Keynes (1982, p. 121, own translation):

When a capitalist economy there is an advanced financial system that lends and borrows – but that the granting of credit is secured by certain degree of real or personal safety – then appears a second type of risk that Keynes called the banker or venture risk lender. The risk of the lender can originate in two ways: 1) a possible moral (moral hazard) risk, ie, a voluntary default or otherwise found, maybe cool, to escape the length of the obligation to pay the loan with database, 2) a possible failure of the safety margin (margin of security) ie, involuntary non-compliance (involuntary default) the non-payment of duty committed by contract with the bank, this breach caused by disappointment expectancy rate expected profit of the entrepreneur business borrower.

There is a third type of risk, which could be called currency risk, which arises from the possibility of an unfavorable change in the value of

the standard coin, caused by price inflation, which thus makes the loan less money safe, as rises the rate of inflation, than the possession of a real asset, although all or the largest portion of this risk caused by inflation of the currency should have already been incorporated in the prices of durable goods.

2.1 Forms of financing and margin of safety against the risk

In a developed economy, with a modern financial system, the financing of the activities of businessmen not only restricted to bank loans. Indeed, securities, mortgages, public debt securities, debentures and shares are the currencies of the financial affairs of the companies used, directly or indirectly, immediately after converting them into cash (currency) to buy assets in the financial markets capital or to invest in the purchase of new capital equipment.

In addition, to offset the prospective yields, Q , through the increase of its capital assets, companies that are financed by debts incurred undertake to pay, by contract, CC , interest and repayment of borrowed capital in a sequence of periods in the future thus increasing their charges. Except those involving funding share issues, the promises of debt payments must be included in the grant of credit signed contracts between parties – borrowers and lenders – who, as legal instruments, shall contain clauses with severe penalties for noncompliance with the agreed between the parties. In case of financing the company, involve emission of shares traded in the capital market, any deviation from the expected payment by shareholders dividends affect stock prices.

Each purchase of a capital asset, both in financial markets and in the production of a new capital asset, when financed by the sale of debentures and/or actions involve a safety margin. Firms finance their investment expenditures for the purchase of new equipment fixed capital partly with their own funds (internal financing) and in part with funds borrowed from third parties (external funding).

It is clear that beyond the difficult decision to invest in buying a particular asset of financial capital and/or production, another essential speculative decision must take a firm is how to finance the control over capital assets you need: or is, as should be financed from own resources (self-financing) and how through making third-party resources. The decision of how to finance investment spending is one of those variables determining both the size of the company, measured by means of the volume of

purchase of capital goods or of its sales, the company's growth as measured by the rate of expansion of their property capital and its sales.

2.2 Financial capitalism and the prices of capital assets

The Finance capitalism is a historical product of the most advanced stage of industrial capitalism in the domain of financial institutions (central banks, commercial banks, savings banks or savings banks, investment banks, multiple or universal banks, mortgage banks, pension funds, mutual funds, financial lending organizations and financing, insurance and pension fund leasing agencies, factory).

In this institutional environment, uncertainties and risks associated with the decisions of investors and lenders involved in the performance of the capitalist economy directly affects the financial structure through the interrelationships of the various economic units portfolios. In a capitalist financial savings, borrow money or take and how to buy and sell stocks or bonds are natural activities for financing production and investment. Financial organizations enter the investment process in two stages: a) the determination of the prices of real and financial assets, b) in providing money to finance investment expenditures. Financial innovation to increase the funds available to finance the purchase of assets, goods and services will produce two effects that tend to increase investment. The first is the marked price of existing assets will increase. These increases raise the demand price of the goods that serve as investment assets. The second is that the fall in the cost of production financing, financial innovations can lower the bid price of the investment good.

If financial relationships are examined within a structure capable of allowing the excess demand for funding in the existing interest rates to drive interest rates and higher financial innovations, then theories that highlight the importance of economic variables, ignoring monetary and financial relations are not defensible. For a theory to be useful for the standard financial capitalist economy, the accumulation process should be the basic interest and currency should be entered in the argument from the beginning.

According to the authors, Elton and Gruber (1995, p. 2) and Minsky (1975, p. 69), "a monetary production economy, any economic unit – business, families, banks, other financial institutions and governments – can in a sense, be characterized by its portfolio". The effects of uncertainty about the desired portfolios and portfolios of own expansion into new desired

future portfolios may be such that the trajectory of the system's equilibrium trend not only is always changing, but it can change very quickly.

A portfolio consists of assets (real and financial) owned by a unit of one hand, and financial debt (liabilities) that must be paid, redeemed or transferred in exchange for something on the other side. For example, contracts of lease (leasing) of real assets (machinery and/or equipment) for use by third parties and contracts for rental of properties are debts and financial assets. In the view of Minsky (1975, p. 69-70):

It is very natural that the business unit that owns a portfolio that consists of the ownership and control of assets and incurred liabilities (debt) to finance the acquisition of the right ownership and / or control of assets, involving the existence of crucial decisions taken in units of a current position that reflects on past and current views about future expectations of economic units, as well as the economy.

In the case of capitalist enterprises, assets and liabilities are recorded on the balance sheet. In principle, the real and financial assets held businesses are salable and companies can take on new debt. Each individual company or corporative, productive, commercial or financial, makes decisions portfolios (portfolio value). A decision-making portfolio has two interdependent aspects: the first relating to the assets that are held, controlled and acquired, and the second relating to the position (inventory) of these assets – owned or controlled – that are financed through debt. That said let us analyze the sources of cash flows.

2.3 The sources of cash flows

In the terminology of Keynes, assets and liabilities (debts) are acquired rights that generate revenue (assets) or expenses (liabilities) in cash in a fixed or variable period of time in the future. Typical sources of money of the various classes of activities are called cash flows or cash flows, and anyone can come from productive, commercial and financial operations. The cash flows of the business at any time have three functions: 1) they signal the decisions of past investments were adequate, they provide the funds through which borrowers may or may not fulfill the promises of

payments on the dates of their salaries, and they help determine the condition of investment financing. In the conception of Minsky (1984, p. 7):

In an analysis of cash flow of the economy, the crucial relationship that determines the performance of the economic system is that between the flow of payment commitments (interest and repayments) of debt and revenue stream operations and contract compliance.

This is because the relationship between cash income and cash payment commitments of assumed debt determines the course of investment and thus employment, output and profits. The ability to fulfill promises of payments depends on the normal functioning of the industrial system produce income. In addition, “the generation of cash flows from sale of assets by dealers or other financial intermediaries – that could allow the owner of the assets honor its debt obligations – produces a drain money from the payment of charges of past debts through the issuance of new debt”. (MINSKY, 1984, p. 126) This second source of money is called the refinancing positions.

The settlement, or rotation from a position of financial assets is the third possible way to get money some units. This is exactly what retailers and wholesalers are selling their liquid stocks (seasonal retailers really make settlement by selling their inventory positions). In designing Minsky (1984, p. 126): “financial assets and debts of an economic unit can be turned into contracts with a temporal sequence of cash receipts and cash payments”. The various items listed under these contracts of receipts and payments in cash dependent on national income: the fulfillment of the commitments contained in the terms of mortgage contracts depends on consumer disposable income and therefore the performance of the economy.

Estimates of the direct and indirect economic impact of fluctuations of national income on ability to pay the economic units (firms, households, banks, other financial institutions, and governments) of an economy used to settle (pay) financial debts sectors can be derived from uncertain future behavior of the macroeconomic. Each unit has its economic or financial reserves and precautionary emerging sources of money. For many units the emergency source consists of positions of salable inventory or redeemable assets. Savings Bonds and deposits are typically patterns of money for consumers and small firms sources.

A corporation may carry a public treasury bill or even other money market instruments to meet payment flows of cash or additional unforeseen cash demands the need for a windfall. Reservations at idle money also serve this purpose to all economic units.

The money (full liquidity) has a special virtue is its availability does not depend on the normal functioning of any market. In principle, the primary (normal) and secondary sources of money for all units can be identified and their relationships with the commitments of debt can be estimated". (MINSKY, 1984, p. 127).

Certainly, a much larger number of economic units use their rents received to settle (pay) their commitments to financial debt.

Payments of interest and repayment of loans taken by entrepreneurs can usually be funded by cash flows derived from corporate earnings. Moreover, the replacement of a deposit from a customer for the deposit of a client B, a debt structure (passive) on a seat is seen as a position refinancing. A typical financial unit gets money to settle (pay) their commitments, as set out in its liability structure, not some of their cash flow or assets derived from the sale of its assets, but instead the issue of surrogate debts.

"The only financial organizations seem to use the cash flows of financial assets to make the payment flows of cash debts, both leveraged or not, are the investment trusts", remember Minsky (1984, p. 127). When a financial or non-financial that normally settles its financial obligations for withdrawals (withdrawals) of the cash flows generated by an income unit – to meet your needs, or want to refinance your position (inventory) – additional pressures can be found in financial institutions borrowing loans.

Some financial relationships are based on periodic liquidation of positions - as is the case of seasonal inventory at retail. The dealers of the capital or insurance agencies market liquidate positions in a set of assets in order to acquire new assets. "But if organizations that typically fund their payments using money from income or refinancing of positions rather than trying to sell their positions, this may indicate that the market for asset position is limited", remember Minsky (1984, p. 127). As a result, a sharp fall in asset prices with a small increase in supply occurs.

In the housing market, the sale of residences is not normally a compulsory sale; in addition a large number of sellers of dwellings are rentiers of other. In this case, if homeowners – as representatives of an economy class

– try to sell their homes, this class ends up not being able to manipulate the market without meaningful price concessions. Occurs that significant concessions in house prices mean a drop in net worth – not just the sale of a unit, but all units of this asset. “More specifically, a decline in prices means that the units offered may be unable to raise the money demanded or expected sales of the affected assets”. (MINSKY, 1984, p. 127)

Almost all commitments debts are settled through two sources of money: income flows and positions refinancing. For most units – especially those that have fixed assets like their real assets – selling their positions in the portfolio is not feasible because there is no organized market for a quick sale, for other assets, the share of marginal adjustments in the way particular financial markets, they are not a normal source of money.

A generalization, one can say that asset prices – prices of stocks – may fall much more rapidly than the prices of the factors rents - prices flows. Thus, any need or desire to acquire money leading to attempt to sell positions reproducible assets will result not only in a large drop of the carrying value of these assets, but also on market prices of reproducible assets that are well below their costs of production chains. Even in the presence of a wide dissemination of the need or desire to acquire money by selling assets, not all assets are allowed a fall in their prices. The prices of some assets will be stabilized by the purchases made by the central bank or loans – refinancing position – such assets may be denominated assets protected.

2.4 The types of cash flows of assets and liabilities

In the language of contemporary, financial assets and liabilities generate a sequence-dated expectations of cash flows (cash flows), ie, cash inflows (receipts) and cash outflows (payments). It should be emphasized that all the different types of cash flows arising from the productive, commercial and financial transactions – income factors, rotation of inventory and financial contracts – can be considered as a function of national income. The various assets and liabilities differ in the nature of cash flows, which gives them some independence.

The various types of flows of cash assets or liabilities can be pre-dated, serial or contingent; cash flows of the companies can be conditional or not may depend on the functioning of the economy; cash flows may be associated with the possession or use of assets or the purchase or sale of assets. The diversity of cash payments of an enterprise in a modern capitalist economy is great. All types of payments of factors of production – wages,

rents, interest and profits – generate cash flows. Are also tax payments and transfers, payment of final and intermediate goods and payments of financial instruments.

Cash flows also vary in the degree confidence. The cash flows that generate an industrial company, when it is in operation, depend on the revenue and costs determined by the market. These cash flows in turn, depend on the strategic position of the company in the industry and industry in the economy. Thus, in principle, a real asset, such as an industrial plant or capital equipment, can generate a cash flow arising from its outright sale or sale of it for use by third parties through the collection of rent (leasing).

The sale of a real asset specialized as a plant producing industrial chemicals, is rare because there is no organized for these types of asset markets. To Minsky (1975, p. 71):

Although when there are transactions involving transfers of undertakings operating subsidiaries – a subsidiary is a company-related to each other (parent company) by ties of ownership, common management, or by lease (leasing) for long-term use of company type its properties or with other control devices – are taken into account, the use of these tangible assets to raise liquidity (amount of money) of the parent company, may not be as rare as soon as the contingency (uncertainty) may even be neglected in terms of their value.

Minsky (1975, p. 71) affirms:

As a result of the economic crisis in the late 60s, emerged in America the craze for formation of conglomerates – mergers and acquisitions between companies that result not only in the group (union) mass of several companies, but also in diversification that should not be confused with the processes of vertical or horizontal integration in supply chains – with many of them looking to increase liquidity (cash) by selling their financial assets or reducing its cash commitments (debt) through divestment (sale or lease) of its subsidiaries.

Therefore, there are less extreme alternatives to increase the flow of money than just sales of real capital assets. The increase in liquidity (money) of a company can be obtained through transfers – via pledge (upon delivery of an object, usually mobile, personal property as security for payment of some debt, which is subject to go to the lender if the borrower fails to meet the combined) or via mortgage (transfer of a salable property as security for a debt or redemption of a bond) – or through the sale of tangible assets of the common stock of subsidiaries that are operating. “These cash flows (cash flows) produced by sale or mortgage of tangible assets of subsidiaries are subject to variability (inconsistency) of large transactions”. (MINSKY, 1975, p. 71)

At any time the amount of money (liquidity) which may be increased by such a transaction expected by a company – for example, a company producing chemical goods – depends on the expectations of future business that make competing companies (established and potential) and the chemical industry (commercial and investment) banks on the ability of the chemical industry to generate cash flows in the current administration or another alternative administration, within an expected economic scenario. Minsky (1975, p. 71) says:

The success of a given joint venture, or even a large corporation does not only depend on the behavior of the market for goods and services and the terms under which it may have to employ inputs, but also the behavior of financial markets, in terms of the which such company may borrow, sell assets or issue shares.

In contrast to the dependent nature of the cash flows that a chemical company can obtain through the sale or lease (leasing) of its tangible assets that are operating, the cash flows that a debt – such as treasury bonds – will generate when the terms of a financial contract are satisfied are guaranteed (insured) in monetary terms. Is this prior knowledge in the contract exceeds reasonable doubt that the possessor of the title of the commitment of the federal government (or even by a trusted private debtor) when established in the legal instrument (contract) will be honored.

Thus, an advanced capitalist economy, possessed of a modern financial system, all debt securities, government bonds and short-term in particular, have very broad, deep and great recuperative power markets, that is, there are many owners the turnover is great and the prices of the instruments

(debt securities) will vary due to the excesses of supply and demand in the public and private securities markets.

A quick sale, one owner title of short-term debt can increase your amount of money just on its face value. For all securities long-term debt, despite the satisfaction of the terms of the contract be guaranteed, these debt securities are speculative or conjectural elements that go into making the decision to own such debt securities. This is because changes in the price level may affect the purchasing power of cash flows, and the market price of a long-term instrument at some date reflect the current interest rate of appropriate maturity.

Money as the currency of high purchasing power and means of payment to settle debts is a particular and special monetary-financial asset from the perspective of cash flows and a world with complex financial commitments. Unlike savings accounts and debt securities, money is a financial asset that does not produce this when net cash flows (interest) when maintained. The currency and other financial assets fixed in nominal terms can be assessed in terms of real value when the prices of goods and services fall is not relevant at this point in the argument.

In fact, one can say that the special value of money that is in the form of currency – as a social institution and general acceptance of currency provided by the higher law – the money can be used to make payments. If a cash payment needs to be done and the paying company has debt securities of the treasure, then, almost always, the debt securities of governments need to be sold so that the resulting product can be used to make the required payment. The possession of money eliminates the need to perform this transaction. Indeed, a paying company that has enough money not to do this transaction. Therefore, it is appropriate to maintain currency and liquids to settle debts in future financial assets.

In a world of private debts denominated in foreign currency, the currency is a safe asset to settle repurchase obligations (debts) in financial contracts. This is because money always has a ready market, for those companies with contractual obligations to pay cash must employ in activities to get money. Currency is not an asset with a constant with respect to income value because the price level of this product may change. Thus, the value of currency in terms of other assets, including those of real capital, is not invariable – the money prices of real and financial assets may change. “Currency has a value only invariant with respect to currency contracts and payments made in cash – whether these committed payments are due to debts, taxes or current transactions”. (MINSKY, 1975, p. 71)

Since the financial interrelationships are admitted to be of vital importance as determinants of how a capitalist economy works, currency and monetary system become the natural starting point for an economic theory. The special importance of money in a capitalist economy does not follow from the fact that money is the means of payment. Currency is also an important means of payment in a socialist economy, but money does not a key variable in the determination of output, employment, investment and prices in a socialist economy. Minsky (1975, p. 71) defends:

This is because in a socialist economy lack the financial interrelationships of a modern capitalist economy in which speculation on the value of financial assets, but also on the value of productive assets is a characteristic of a capitalist economy and not a socialist economy.

Moreover, the relevance to the analysis of a capitalist economy paradigm is not a cooperative economy; the relevant paradigm is a financial system with a City or Wall Street where the loading of assets as well as current transactions are financed through debt. Clower (1969) is an aphorism that the main feature of the capitalist economy is the fact that the “currency to buy goods and goods buy money, but goods do not buy goods”. However, this maxim Clower failed when he wanted to highlight the paper money in a capitalist economy. Indeed, in a capitalist economy in which private financial debts are used to acquire control or ownership of companies, financial debts are also used to “buy” the real capital assets.

These private financial debt commitments generate cash flow. The money to pay off debts of households and firms commonly flows of income (wages, rents and gross profits) arising out of productive activities. For Minsky (1975, p. 73):

The ownership of money and financial assets that are close substitutes for money – like savings deposits, certificates of deposits and other financial innovations – work as an ‘insurance’ against the uncertain future of the economy or of natural markets, making it is an inappropriate way, i.e. a way such that the cash flows from the productive capacity or to increase the amount of money to finance current operations transactions are insufficient to meet the needs.

Besides, the modern capitalist economy has financial companies such as banks and insurance companies, whose normal function implies that these institutions receive money both compliance with the terms of their financial contracts, as the sale of financial assets, in organized financial markets, or new debt created recently.

For such financial drives – also for companies and families – the retention of money acts as a guarantee to supplement the money not received due to default of debt instruments or even poorly functioning financial market those assets sold or taken loans. (MINSKY, 1975, p. 73)

It must be said that financial crises occur because businesses and families require or desire more money than is available in their usual sources (gross wages and profits) and so they direct their efforts to increase the availability of money for non-usual sources. Under pressure from several financial and non-financial firms can exit – a need for more money or because of a defensive financial policy – some financial markets. For Minsky (1984, p. 125):

Such clearances not only affect the potential change in market prices, but can also collapse the connections of business: both ways of doing business and financial reserves and implement a defensive policy of traditional sources of money may be affected.

The constraints on the supply of financial markets can press the demand for money from companies that were not under particular pressure, and were not directly affected by the shortage of money, to pay attention to the new financial connections. The initial impact of a recession can spread through a third party or not reach the nearest businesses. The financial market events that disrupt the established financial channels and affect the present value of the cash flows not directly affected economic units.

For most consumers and nonfinancial companies the largest source of money is from their current budgets. Wages and salaries are the main sources of money for major consumers and sales of goods and services are the main sources of productive enterprises. “For financial intermediaries and more dealers – merchants active agents who buy for resale – money flows most common of these financial firms can be derived from the sale of financial assets”. (MINSKY, 1984, p. 126)

For dealers of financial markets revenues in cash commonly result more sales than its financial commitments set out in its asset inventory assets. Under normal circumstances, the dealers when conducting their activities do not expect to sell only their financial positions, when they sell a number of assets they continue to get a new set of assets.

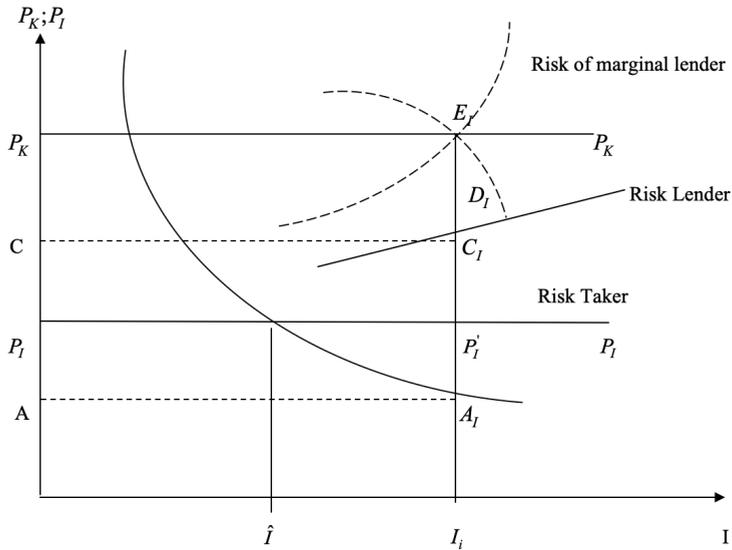
3 The microeconomics of investment financing

In this section, we seek to analyze the financial performance of a given investor company representative. Suppose that this company wait for the next coming period that your gross profits after the payment of taxes due, and then to pay its creditors and dividends to shareholders, either \hat{Q}_i . This expected gross profit (which also includes the depreciation reserve), \hat{Q}_i , is independent of the level of investment the company itself, although the level of aggregate investment spending, to affect aggregate income, end also affecting the expected aggregate proceeds \hat{Q} . "This expected the company's gross profit, after deducting the payment of taxes and debts, is your source of funding whose availability expected for the coming period". (MINSKY, 1975, p. 107) Minsky (1975, p. 107) argues:

Suppose now that the offer price of the fixed capital (P_i) the company expects to buy – this offer price determined by the manufacturer and fixed capital – is independent of the quantity that will be bought by this company, which means that this company is not as big as purchasers of capital equipment to the point of their demand affect the price of the fixed capital.

Therefore, the volume of investment that the company can finance is internally $I_i = \hat{Q}_i / P_i$; whence it follows that $\hat{Q}_i = P_i \cdot I_i$: which corresponds to the expected capacity limit of funding within the company representative, based on expected discounted gross profit taxes and debts, can be represented by a rectangular hyperbola as shown in Figure 1.

Figure 1 – Behavior of a financial company representative



Source: own elaboration.

This diagram shows that if the company expects to acquire a volume \hat{I} investment at a fixed offer price capital goods, P_I , she could fully self-finance the total volume of capital equipment you wish to purchase. However, if a company expects to purchase a greater volume of capital goods, such that $I_i > \hat{I}$ investment at a bid price of the fixed capital. Then spending additional investments, $P_I \cdot I_i - \hat{Q}$, should be financed with debt, i.e., with external funding. In this case, “assuming that the representative firm will borrow, it must undertake to pay his debt in cash in the future, in the form of multiple streams, CC , current in exchange for money to finance the increase in investment spending, $P_I \cdot I_i - \hat{Q}$ ”. (MINSKY, 1975, p. 107)

There is, however, one exception: the company may have a surplus of purchasing power – in the form of currency current course or securities marketable on organized markets – which the company can use to finance their additional purchases of investment goods. In a world of uncertainty, there are reasons why a company or family as debts also has currency and other financial assets, ie other units of debt.

“In part, the position of these currency reserves and financial assets isolates the normal business operations of the vicissitudes of the market caused by uncertainty”. (MINSKY, 1975, p. 107) When the position of such financial and monetary assets outlines some fall, there is less protection of the company against unforeseen market changes, remember Carvalho (2014).

From the analytical point of view of the structure of the portfolio of the representative firm, reducing reserves of financial and monetary assets – which acts as a “cushion” cushion impact of unforeseen changes in the financial market – corresponds to a rise in the stock of liabilities (debts) company: both changes imply that there is a set of events in the external environment that can seriously affect the financial capacity of the company to meet its contractual commitments or to meet its investment plans. For Minsky (1975, p. 108): “this means a reduction of the safety margin of the company, which makes it vulnerable financially to take foreign loans to finance the purchase of new property investments”.

The company capitalizes on its prospective earnings, Q_i – which includes dividends, interest and other cash payments on debt, but excludes taxes – a rate \hat{K} . This rate indicates a value of the stock of capital assets of the company, $\hat{P}_{K_i} \cdot K_i = \hat{K}(Q_i)$, which is independent of the financial structure of the company. The company also capitalizes on its cash flows (cash flow) committed, DC, with their debts, dividends. Now, following the theoretical track Minsky, it is assumed that the capitalization rate on the debt of the company is higher than about prospective earnings, Q. “This is so because for a policyholder cash inflows (cash flows) to receive for the debt, the CC’s are seen as certain, while inflows of money (cash flows) of fixed assets, the Q’s are uncertain”, supports Minsky (1975, p. 108).

For the decision to invest in the purchase of fixed equipment that must occur is $P_{K_i} > K(Q_i)/K_i \geq P_I$, i.e., that the price of a unit of fixed capital is greater than or equal to the price of a unit of investment. In the absence of financing the investment with debt, investment expenditures will be lower because only covered with self-financing, so that will be the level of investment spending, $\hat{I} = \hat{Q}_{i0}/P_I$, as seen in Figure 1.

For the acquisition of fixed assets is financed by retained earnings, \hat{Q}_i , or debts, it is necessary that $\hat{K}(Q_i - CC_i) > 0$. An alleged abstract world, the assumption that the supply of finance for a business is infinitely elastic, that all prices and prospective yields are independent of the sheer scale of operation of the firm and that the realities of risk and uncertainty are never introduced, if flows CC debts needed money to finance the purchase of a unit of capital good are greater than the prospective earnings, then a company with such prospects, might want to buy an unlimited amount – even more, infinite – capital goods.

But common as the borrower’s risk and lender’s risk realities, allowing monopolistic positions, penetrate, even in this abstract world, such that even if $\hat{K}(Q - CC) > 0$ the company will acquire only a limited amount of fixed assets.

3.1 The risk taker in a world of uncertainty

The risk of the entrepreneur or as it is also called the borrower's risk arises from doubts about the likelihood of getting really profitable retribution that awaits the future. In fact, the risk of the entrepreneur who takes loan is, in a sense, a real cost. This risk is likely to decrease by mean of its distribution or effect of greater accuracy in predictions. Still, in an environment of uncertainty about the future, the predictions made by the best that are subject to the state of confidence of economic agents. From the perspective of Minsky (1975, p. 109):

The risk of the borrower is twofold: First, in a world of uncertainty, where the fates of various types of capital and the various firms in the future may differ goods, the entrepreneur-borrower who is risk averse should diversify its business. This means that beyond a certain point, that for the individual entrepreneur or a corporation depends on the size of their wealth, the capitalization rate for any type of the capital goods, which should be used in any particular branch of industry, declines when the amount of capital assets owned by the company increases.

Second, since the entrepreneur-borrower look at the influx of money due to debt incurred (CCs) for granted; and inflows of money from the prospective income (Q's) as uncertain, then the increase in the rate of investment is financed by debt decreases the margin of safety and that lower the capitalization rate that the borrower applies about prospective earnings, Q's. To Minsky (1975, p. 109):

Because of the risk taker, the demand price of a fixed capital good may decline and move away from the offer price of that capital good, P_k ; and if this decline continue, it is expected that this deviation may become more pronounced the greater the commitment to payment of the debt (which was used to finance the purchase of that particular type of capital asset) and the higher the proportion of borrowed funds.

Typically, this point of detachment, as a result of the sharp fall in demand price relative to the offer price of that particular type of the capital

goods, may occupy a position somewhere to the right \hat{I} , with the amount of investment being financed with internal funds, but the level of investment may also occupy a position to the left \hat{I} , as seen in Figure 1.

This last position of the volume of investment occurs if the perception of the entrepreneur is that the degree of impairment inherited as a result of debts incurred to finance this particular type of capital good, is too high – just a desire to diversify or divest themselves becomes dominant – or if the entrepreneur realize that the financial balance inherited from your company also contains a lot of debt.

These “new” visions can emerge as a result of developments in a world of uncertainty. Nevertheless, depending on the future scenario, favoring symmetrical visions can develop more expertise and more debt. Finally, it is noteworthy that the risk of the borrower is subjective because it does not appear in the signed contracts. Consequently, the risk of the borrower is the focal point for the fears and tremors of uncertainty and surprises high impulse pet point (*animal spirit*). In the words of Carvalho and Carvalho (2018, p. 241, own translation):

It is noted that investment expenditures depend on the expectations of the entrepreneurs or what Keynes called the animal spirit, since both in the short term and in the long term investment spending can not be a function of current aggregate income and, therefore, of the volume of employment.

3.2 The risk of the lender in a world of uncertainty

The risk of the lender is in addition to investment spending, which would not exist if cost lender and borrower are the same people. Furthermore, the risk the lender assumes, in part a duplication of a portion of the risk of the entrepreneur, which is added twice the rate of pure interest, which is compared with the expected minimum income, which induces the entrepreneur to invest. If a business is risky, the entrepreneur who borrows money to build it will require a larger margin of safety between their expectations regarding the expected rate of profit and the interest rate that seems advantageous in the eyes of the entrepreneur to go into debt; while precisely the same reason will lead the lender to demand a greater margin of safety between their pay and the interest rate which is

sufficient to induce him to lend unless the power and wealth of the debtor are so significant that enable it to provide a margin exceptional warranty.

The risk of the lender appears in the clauses of contracts between banks with business borrowers. For any set of market conditions, the risk of the lender, when applied to a particular company, takes the form of greater demands on debt signed contract to release the flow of money to the borrower, the ratio increases when the debt and total assets of the company. In fact, the risk of the lender appears in financial contracts in several ways: high interest rates, periods of lower salary requirements to undertake specific assets as collateral in addition to restrictions on the payment of dividends and the granting of new loans and more.

The lender's risk increases with the increase of the ratio between debt and financing on share issues or the ratio between the flow of money committed to the contract debt and the total flow of money from the prospective borrower company. According to Minsky (1975, p. 110), in a significant sense,

The bid price of a well fixed capital is one that the manufacturer of capital equipment - or its owner - offers to sell it plus a capitalized value of the excess of cash commitments of the financial contract on commitments that would be implied if the investment had been financed by the internal resources of the company.

This additional value is the monetary value of the inverse of capitalized insurance. The higher the leverage (ratio of own internal capital and external loan capital) of a company for the purchase of a new unit of investment, i.e., the larger the ratio between the cash value of external financing (debt owed) and domestic financing (own resources), then the greater will be the contractual requirements that compel the company to release the money borrowed.

The curve of demand price (P_I) has a discontinuity in the volume of investment (\hat{I}) that can be self-financed with internal funds of the company. After a positive increase in the amount of investment financed with external financial funds, it is expected that the curve P_I begins to rise and the climb is done at an increasing rate of increase in the effective price of capital good that the company wants to buy. Therefore, when the rate of contractual debt grows, all debts incurred by a given company will, from refinancing, conform to the legal requirements set out in marginal

agreement. Thus, with a lag, a marginal curve upward supply curve, equivalent to a monopsony curve becomes a crucial respect the decision that incorporates the risk of the lender, says Minsky (1975, p. 110).

The essential fact of the risks of the borrower and the lender is that they reflect subjective valuations in an environment marked by uncertainty. Two businessmen faced in similar circumstances, but with different temperaments, could build scenarios on the risk of the borrower very different: where one takes the decision to invest, I_t , the other can decide more or less. The risk of the lender leads to observable patterns of lending rates, such as those that appear in the “ratings” of municipal debts and corporations of various services or premium on the prime rate that companies have to pay the banks.

During this particular time, “financial market” seems to operate with a consensus on the extent of operations that can be financed with debt for a particular rating, but this consensus may extend longer or simply change: the acceptance and observance of the ratio of debt and actions vary systematically over the business cycle fluctuations. The intersection of the demand curve, consented to by the borrower’s risk, and the supply curve, adjusted for the risk the lender determines the scale of investment. As can be seen in Figure 1, with the intersection of the demand and supply curves incorporating the risk of the borrower and the lender in point D_t , the level of investment I_t will be at a price P_t per unit of capital good.

In this context, the total investment spending, in Figure 1 the perimeter $OP_tP_t'I_t$, a party represented by OAA_tI_t , will be financed internally with the company’s own resources; and the other party, represented by $AP_tP_t'A_t$, will be externally financed with debt in the financial market, remember Minsky (1975, p. 111). Of prospective yields per unit capital asset, borrowing results in proportional commit money A_tC_t/I_tE_t , and the owners expect to receive stock of proportionate cash flow $(IA_t + C_tE_t/I_tE_t)$.

After the capital goods are integrated with the production process, and these capital assets generate income Q ’s expectations, then the capitalization rate \hat{K} , the capital goods OI_t are valued in P_K . Their total value is represented $OP_K E_t I_t$; the investor will have a capital gain. Debts with more guarantees, generate cash flows proportional to A_tC_t , but will be capitalized at a lower rate of interest than they were originally, because the lender’s risk premium will also be proven to be excessive, as Minsky (1975, p. 111) notes.

The initial value of shareholders’ investments, \hat{Q}_t , equal representation OAA_tI_t , will be OAA_tI_t plus $CP_K E_t C_t$. This should be reflected in the prices of shares traded. The risk of the lender and the borrower, as limiting factors

that ensure the success of the productive operations of capital goods may lead to capital appreciation to the lender and the borrower.

3.3 Sensitivity of investment to the risk of the borrower and the lender

The pace of investment is more sensitive to the risks of borrowers and lenders. If the curves of risk of the borrower and the lender fall markedly below the capitalized value of Q's income and rises sharply above the price of investment goods, then the expense of investment will be funded internally; if they are flat rather than sloping, the financing of investment spending will be heavily leveraged. In each period a firm inherits a structure of your past debts (liabilities) and a set of capital goods (assets). For Minsky (1975, p. 112):

The resulting effects of experience on preferences and expectations about the future are those that reduce the risk of the borrower and lender, so that $I_2 > I_1$, of investment spending to take effect for a given curve \hat{Q} , as can be seen in Figure 2, then a corresponding change should occur in the acceptable ratio of external financing (debt) by issuing shares to the existence of the stock of capital assets owned by the company.

This will reveal the great turning radius and the ability of the company to finance their investments by borrowing money on the capital market based on the property of his inherited stock of capital goods. That is, for a given stock of capital goods owned by a company, the relationship between CC, the cash flows for payments of debts in the form of dividends and interest, and Q, the cash flows of the present and expected gross income after-tax, shall be reduced in accordance with the new standards.

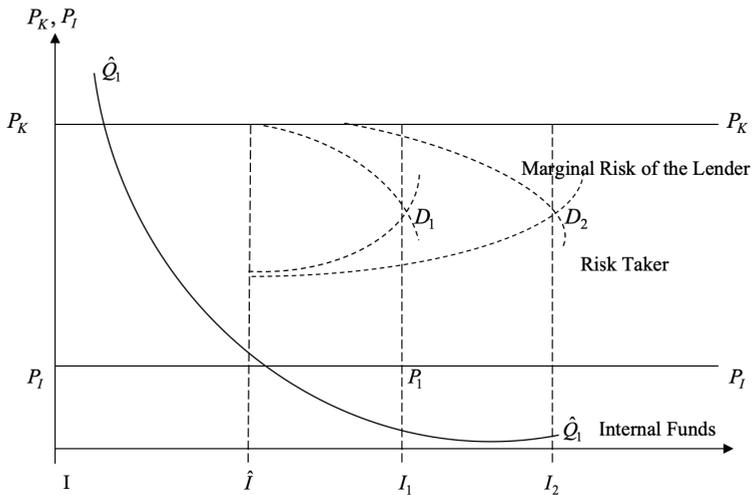
The leverage of investment financing in a monetary production economy, based on the expected profit gains in the future can be very high during a period of declining risk aversion because the valuation or revaluation of fixed assets reveals the debt capacity company, i.e. its power to borrow. However, if a decrease in risk aversion affects the families who own shares in the same manner that affects the bankers and business man, which perform changes in the relations of acceptable debt to cover assets and investments of capital goods, households are more willing to

finance such purchases “marginal” shares. Such behavior will lead to a rise in stock prices.

This rise in the market price of the shares was played by Keynes with involving an increase in the marginal efficiency of capital corresponding class type, which according to the terms used by Minsky raises the P_K for the data Q’s. Keynes (1982) noted that when the shares of a listed company are very high, so that the same company can increase its capital by issuing shares on favorable terms, the ensuing results are the same as if she could obtain loans at a reduced rate interest. For Keynes (1982, p. 126, own translation):

Now, I would describe this fact saying that a high price for existing shares implies an increase in the marginal efficiency of capital corresponding type and therefore has the same effect as a decrease in the interest rate (since investment depends on a comparison between the marginal efficiency of capital and the interest rate).

Figure 2 – Sensitivity of the estimates of investment risks



Source: own elaboration.

In fact, the hope of a positive outcome very favorable in the future of an expense of productive investment, which in the mind of the entrepreneur

can compensate for the risk the lender is not appropriate to reassure the lender. Hence why the double precaution with a portion of the risk cannot be neglected.

Keynes (1982) notes that in boom periods, the alleged right opinion about the magnitude of the two risks embedded in the interest rate on loans – the risk of the borrower and the risk of the lender – may represent an abnormal and dangerously low underestimation that could bring serious consequences for the financial system. “This implies that during the boom the rate of borrowing to finance investment increases: thus indicate the available data of the debts of corporations”. (MINSKY, 1975, p. 113)

4 The macroeconomics of investment financing

The argument was developed for a hypothetical company or a hypothetical family. Now to extend the argument to the economy as a whole is necessary to give an aggregate treatment. Initially, we carry the previous analysis the proposition that, for a given stock of capital goods, the preference for financial assets portfolio (portfolio value) generate a list price of market supply of money for capital goods in general such that the market price of a good existing capital (P_K) is positively related to the quantity of money (M) and the present and expected (Q) yields.

This function, $P_K = P_K(M, Q)$, incorporates three relationships identified by Keynes: 1) between the currency and the interest rate on the debt; between the interest rate on debt and the marginal efficiency of capital, i.e., the factors capitalization of capital assets; and between the marginal efficiency of capital (expected rate of profit) and prospective earnings of capital goods, remember Minsky (1975, p. 113).

Given the amount of money, this relation determines a price of demand for investment goods. The demand curve for capital goods is upward, upward sloping with respect to the money supply. The Figure 3 illustrates the relationship between aggregate investment and financing. The supply curve of investment goods is an increasing function of the volume of investment. Besides that, the funds provided from internal financing are represented by the downward curve $\hat{Q}(\hat{I})$.

capital loans of financial institutions) not used and charged by companies becomes available to fund new investments in the future.

Moreover, as the charges of impaired debts are lower than forecast, then the profits from sales of shares are higher. As a result, “stock prices in organized markets respond favorably to these increases in cash flows of the internal funds of companies”. (MINSKY, 1975, p. 114)

Minsky (1975) developed a very unique way to see the investment that the conventional estimate for calculating the risk of the lender and borrower risk, admittedly influenced by the performance of the economy in the past, acts as an immediate regulator of the rate of business investment and extension of the economy.

When the provision of investment financing through debt increases and entrepreneurs realize their intentions in practice, as shown in Figure 2, then the ratio between the flows of the propensity to pay debts (CC) and the flows of the prospective income increases. When CC's increase relative to Q's, then the gross profits expected after-tax and payments of commitments made in contracts of debt will begin to grow less rapidly than the rate of investment and financing contracted by debt.

In these terms, lenders and borrowers seek innovative ways of financing investments, meaning that borrowers increasingly on margin, seek new sources of funds possessing much higher funding liquidity – and, with a result, contractual debt requirements will increase. This implies that the demand for money in the short term through debt will surpass the money generated through prospective earnings, the Q's businesses. This is mainly due to the short term nature of many debts incurred in periods of booms growth of economies, which require payment of the principal at a faster than revenue in cash generated by business operations basic rate.

The companies that use this type of short-term debt require refinancing your debts as they come due their payment terms set out in the contracts. In a monetary production economy, the duration of the period of “boom” of the economic cycle, once initiated, is uncertain. Indeed, “the duration of the ‘boom’ depends on the realization of the optimistic expectations of expected returns, such that capitalists’ profits increase for both debt and equity investors for investors as capital goods”. (MINSKY, 1975, p. 114)

Among the many possible causes – rising wages or retro – feeders production costs of the rise in interest rates of past long-term debt, repayment of high cost debt preterit – a large number of companies may be forced to try to simultaneously raise the monetary liquidity in exchange for financial liquidity taking advantage presumably have some of their financial assets, i.e., trying to sell their liquid assets.

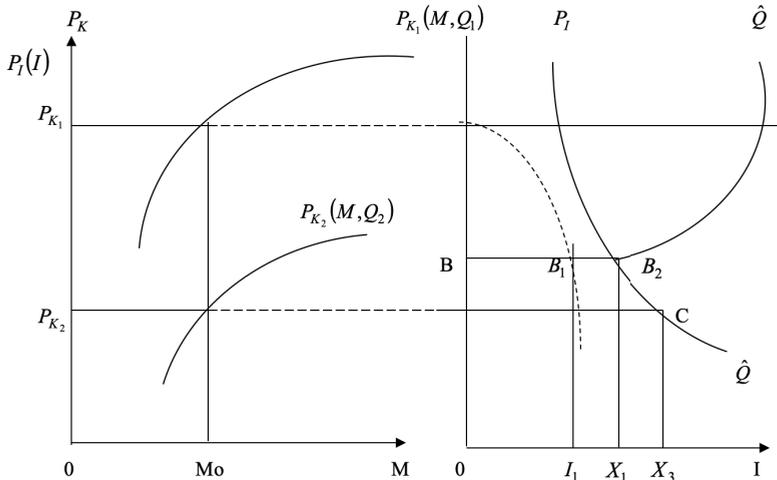
5 Conclusion

It is noticed that some companies, however, the burden of past debts, in the form of commitments to pay money, may become so heavy that such companies may be forced to sell or even compromise their capital assets in new contracts debts for money to settle its debt commitments. That situation can occur with both joint ventures – individual and limited – as with large corporations the corporation type.

The principle of scarcity of Keynes, the assets are liquid when there is no preponderance of sellers over buyers. Therefore, whenever the need for position by selling assets becomes too widespread, then, unless there is support broad market for reserves, as a conscientious central bank, asset prices can fall abruptly. For Minsky (1975, p. 115), “when prices fall in net assets – including shares – corresponding marginal efficiency of capital or the corresponding demand price of capital goods also fall”.

In Figure 4, we try to portray the situation after a “crisis” or a reconsideration of the structure of desirable corporate debt. With $P_K(M, Q)$ and M_0 money, the market price of capital goods is quite high for a positive funding can through debts occur. However, “the recent experience has compelled the potential borrowers consider their risks so that only OI_1 investment is desirable”. (MINSKY, 1975, p. 116)

Figure 4 – Effects of a change in the function



Source: own elaboration.

This will occur if management begin to consider too risky debt structure. In this case, a conservative restructuring of the balance sheet is therefore desirable: for example, the prospective internal funds of these companies, generated by Q's, a party represented by OBB_1I_1 can be spent on the purchase of capital goods and other represented by $I_1B_1B_2X_2$ can be used to settle debts or to acquire financial assets.

In this situation, if the income that could generate internal funds expected Q required an aggregate investment beyond I_1 , then internal funds realized would be lower than expected. Thus, "the desired improvement of the structure of the balance between assets and liabilities would not be achieved and this could trigger a recurring process of deflation of income and debt". (MINSKY, 1975, p. 116)

If P_K is the relationship that determines the price of capital goods, the total expected from internal funds of firms will be used to settle debts or to purchase financial assets. In the set of figures used to illustrate the investment ratio, Figure 4 shows the state of liquidity trap. The impotence of monetary policy illustrated here to do not have the interest rate on public debt remains constant when increasing the money supply.

Lastly, the impotence of monetary policy illustrated here to do not have the interest rate on public debt remains constant when increasing the money supply. Indeed, as illustrated in Figure 4, even if the interest rate on financial assets continue to fall when the money supply increases, "the capitalization rate applied to investment property may not rise enough to induce new investment". (MINSKY, 1975, p. 116)

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