The causes of investment: a theoretical analysis from the neoclassicals to Kalecki

As causas do investimento: uma análise teórica dos neoclássicos a Kalecki

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Abstract

This study provides an analysis of neoclassical, Keynesian, Marxist and Kaleckian theories regarding the factors that determine investments. To this end, a broad review of literature was conducted. Neoclassical theory presents a rational arrangement from the perspective of an optimal scenario, while Keynesian theory adds the assumptions of uncertainty and animal spirit to this arrangement. In Marxist theory, in turn, investment only occurs if the amount of capital at the end of the production process is greater than the amount initially allocated, which is closely linked to the profitability of firms. Finally, Kaleckian theory presents the connection between the short term (based on Keynesian assumptions) and the long term (Marxist assumptions) to understand the factors that generate investment.

Keywords: investment; neoclassical theory, keynesian theory; marxist theory; kaleckian theory.

Resumo

Esse estudo fornece uma análise da teoria neoclássica, keynesiana, marxista e kaleckiana acerca dos fatores que que determinam os investimentos. Para tanto, realizou-se uma ampla revisão bibliográfica. Percebe-se que a teoria neoclássica apresenta um arranjo racional sob a perspectiva de um cenário ótimo, enquanto a teoria keynesiana agrega os pressupostos da incerteza e do *animal spirit* a esse arranjo. Na teoria marxista, por sua vez, o investimento só ocorre se o montante de capital ao fim do processo produtivo for maior do que o montante alocado inicialmente, o que está intimamente conectado a lucratividade das firmas. A teoria kaleckiana, por fim, apresenta a ligação entre o curto prazo (a partir de pressupostos keynesianos) e o longo prazo (pressupostos marxistas) para a compreensão dos fatores que geram o investimento.

Palavras-chave: investimento; teoria neoclássica, teoria keynesiana; teoria marxista; teoria kaleckiana

JEL: E22; E13; E12; E11

Introduction

Investment decisions are one of the fundamental pillars of economic theory, reflecting how resources are allocated to promote economic growth and development. Different schools of economic thought offer different perspectives on how these decisions should be made and what factors should be considered. This article explores the approaches of the neoclassical, Keynesian, classical Marxist and Kaleckian schools to investment decisions.

The neoclassical school, with its focus on market efficiency and the rational behavior of economic agents, postulates that investments are guided by expectations of returns and market equilibrium. In contrast, the Keynesian school emphasizes the role of business expectations, uncertainty, and government intervention in determining investment levels (especially in periods of economic instability). The Marxist perspective, in turn, analyzes investment decisions considering power relations and the dynamics of capital accumulation, highlighting the contradictions inherent in the capitalist system and the impact of these decisions on the working class. The Kaleckian school, which shares some Keynesian principles, places particular emphasis on the power relations between capital and labor, as well as on the macroeconomic implications of investment decisions, such as income distribution and the economic cycle.

This article examines how each of these four schools of thought interprets and guides investment decisions. For this article, it is divided into five sections in addition to this introduction. Section two presents investment decisions from a neoclassical perspective. Section three presents Keynesian investment theory. Section four presents the classical Marxist approach and its effects on investment decisions. Section five presents Kaleck's conception of the subject. Finally, there are the final considerations.

The Investment Function from a Neoclassical Perspective

In the neoclassical theoretical framework, whatever the markets, they will be continually adjusting so that the economy operates at full employment without incurring excess supply or shortage of demand. Prices, interest rates, wages and others adjust repeatedly (through the Walrasian auctioneer[26]) to keep the economy in balance. Thus, there are no crises of over- or underproduction, since aggregate supply is equal to aggregate demand, thus validating Say's Law[27] (Foley; Michel, 1999).

To analyze the arrangement of the neoclassical investment function, some hypotheses need to be assumed, namely: (i) there is full employment of production factors; (ii) time is logical, consequently, an expenditure on capital goods is irreversible; (iii) past investment does not influence current investment; (iv) there is perfect knowledge, rational expectations, a perfect secondary market (resale) or, in general, efficient markets; (v) the right to property and management is concentrated in the same agent; and (vi) there is a distinction between natural and legal persons (Pasinetti, 2000).

[26] Market equilibrium is achieved through the Walrasian auctioneer who successively adjusts the economy so that all supply equals demand and thus maintains the economy at full employment.
[27] Supply creates its own demand, making a general crisis of overproduction impossible.

Assuming that the right to property and investment management is concentrated in a single agent (the owner of the company is the manager himself), there are no other objectives other than maximizing profits. Therefore, according to neoclassical theory, maximizing profits is the central objective of firms (Brancaccio; Gallegati; Giammetti, 2022).

For neoclassicals, profits are the result of investments, which in turn have a direct relationship with the cost of capital. What determines the realization of a given investment is the profit factor, which is perfectly known[28], being higher than the cost of capital factor (which is given by the interest rate of the financial market). Under these conditions, the implementation of the investment will be viable; otherwise, the investment will not occur (Agénor, 2004).
The cost of capital plays a central role in the decision to invest in Neoclassical theory. The cost of capital, in turn, is influenced by three variables (Agénor, 2004):

1. Opportunity cost, which is measured by the return that the firm can obtain by investing capital in the production process or, on the other hand, by investing it in the financial market. If *i* denotes the interest rate and PK the nominal market price of a capital asset, this cost becomes iP_K;
2. The cost of depreciation of a capital asset (δ), which per unit of time is given by δP_K;
3. The capital loss (or gain), results from the fact that the price of capital may be falling (or rising), which implies that the firm can obtain less (or more) if it waits to sell the capital; this is measured by $-\Delta P_K$ per unit of time.

Therefore, the cost of capital is given by:

$$c_k = P_K \left\{ i - \frac{\Delta P_K}{P_K} + \delta \right\} \qquad (1)$$

Where c_k is the cost of capital, and $i - \frac{\Delta P_K}{P_K}$ can be viewed as the interest rate measured in terms of the price of the capital good.

Given the cost of capital, entrepreneurs estimate future profits through rational expectations. These indicate that capitalists understand the true model of the economy

[28] According to Moreira (2006), neoclassical economists assumed that agents had perfect knowledge of a programmed and immutable economic reality, which would govern all past, present and future events. In this sense, the economy becomes subject to invariability, that is, it is not susceptible to changes by human action.

and, to this end, use all available information to make estimates about the future. Therefore, it can be said that investments are determined by the market: profits are perfectly known, as is the cost of capital (which, in this case, is determined by the market interest rate). In turn, the interest rate:

> ... is determined by the price of supply and demand, that is, by automatic market mechanisms, and its function is to maintain the economic system permanently and necessarily in equilibrium. If, for any reason, the demand for investment is reduced... the interest rate would be reduced immediately and the volume sought would be reestablished through a movement along the demand curve. Within the neoclassical model, therefore, the interest rate has a fundamental ideological role, insofar as it satisfies its basic objective, that of developing a model of a capitalist system that maintains equilibrium automatically, without the need for State intervention. In the same way that prices themselves maintain the equilibrium of the market, of goods and services, and the wage rate maintains the equilibrium of the labor market, the interest rate maintains the equilibrium not only in the financial market, but also in the market for invested capital goods (Bresser-Pereira, 1970).

Expectations could never be frustrated due to the presence of perfect knowledge, rational expectations and efficient markets. Therefore, the capitalist did not have a significant role in this context, only to analyze the current interest rate and the possible future income (profits) and then choose the production technique that maximizes profits. Thus, capitalists have a secondary role in the economy, and do not need skills or refined perception for a given enterprise to be successful and implemented.

The financial market assumes an important role in neoclassical analysis, making it possible for capitalists to obtain resources from financial institutions when companies' profits are not sufficient to finance new investments. Third-party capital acts as a perfect substitute for internal capital, since debts can be contracted without affecting the expected value of the projects. Thus, the theory once again returns to the initial condition, that is, that the investment made, whether through own resources or those contracted in the financial market, will be viable if the costs of capital are lower than the future profit (Caseiro, 2022).

Another aspect of neoclassical theory is the distinction between individuals and legal entities regarding their role in the economy. Individuals only ensure financial resources for companies through savings. Just like capitalists, individuals aim to maximize wealth in the financial market, which functions perfectly. However, only companies invest in real resources. Since the interest rate adjusts so that the entire amount saved is used, with neither excess nor shortage of capital (validating Say's Law), the savings of individuals will determine investment. It can then be said that investments depend directly on savings: when there is a small amount saved, the interest rate will be high and few

investments will be made; on the other hand, when there is a large amount saved, there will be a large amount of investment, since the interest rate will be low. That said, aggregate savings, through successive adjustments in the financial market, will determine investment in both the short and long term.

The Keynesian Investment Function

Although Keynes, in many aspects, remains linked to his neoclassical theoretical background, he differentiates and challenges this school of economic thought in several ways. Among them, Keynes sees investment as the variable that drives the growth process, rather than savings. Regarding the viability of investments, Keynes introduces uncertainty into his theoretical framework. In turn, he also contests the neutrality of money hypothesis assumed by neoclassical economists.

For Keynes, the economy is subject to random and unpredictable shocks that can suddenly change the environment in which investments occur, making them uncertain. Consequently, he argues that economic agents are not capable of clearly predicting future economic events (Lopez; Mott, 1999).

In Keynesian analysis, uncertainty is a consequence of economic instability. In this sense, uncertainty arises because (i) the future is uncertain and indeterminate, meaning that economic events depend on human decisions, which are influenced by changing expectations and imperfect information; (ii) information is incomplete amid complexity, that is, information is never sufficient to accurately predict future outcomes, as the economy is a dynamic and interconnected system; (iii) economic agents form their expectations based on social conventions, past experiences, and beliefs about the behavior of other agents, which can lead to abrupt fluctuations. On the other hand, the cost of capital is simply given, as interest rates are determined in the monetary sector; however, they are also uncertain because they can undergo sudden changes due to economic shocks. Keynes, therefore, analyzes the behavior of the economic agent in an unpredictable environment (Moreira, 2006).

Under conditions of uncertainty, investment is determined by the state of mind of the capitalist (animal spirit), meaning that investment decisions depend on capitalists' perspectives regarding the future. Capitalists can choose to invest either in capital goods or financial assets. It is optimism[29] about the future that will lead the capitalist to opt for the productive sector.

The core of Keynesian theory is the principle of effective demand, in which investment determines savings. In capitalist economies, savings connect to the productive sector through the monetary sector, meaning that economic agents may choose to save without necessarily turning those savings into investments in the productive sector. Meanwhile, entrepreneurs seek resources for investment from the financial sector. However, this sector is sensitive to shocks, transmitting the degree of insecurity and the preference for liquidity through the interest rate variable. When the interest rate faces

[29] In addition to the state of mind, aspects such as conventions and psychology determine profit expectations and, consequently, investment spending.

threats that increase uncertainty, interest rates will rise, depressing the capitalists' willingness to invest, and the saved amount will not translate into investments. In such an environment, capitalists' resources tend to migrate to the financial sector, as it may prove to be as or more profitable than the productive sector (Epstein; Gintis, 1995).

When investments increase, more workers are employed, and economic agents' income increases, leading to an increase in consumption and savings. Savings increase because a rise in income does not result in a proportional increase in consumption (the marginal propensity to consume is less than one), as agents also value future consumption, setting aside part of their salary for savings (known as the propensity to save out of income). From the consumption function, which depicts the relationship between consumption and income level, investment generates income that consequently is divided between consumption and savings at the end of the given period. According to Keynes (2007):

> Evidence has shown that the propensity to consume is positive but less than unity; that consumption is an increasing function of income; and that people have a positive propensity to save, also because of their expectations about the future.

Thus, there is a direct relationship between investment and savings: when income rises due to an increase in investments, the amount saved also increases. Therefore, investment determines savings, not the other way around, as the neoclassical school claims.

A particular investment will be viable if the expected future return exceeds the cost of capital. However, the capital required for investment (in the absence of own capital) is provided by the financial market (which is a source of economic instability) and borrowed at an interest rate. Since the interest rate reflects financial market instability, it makes investment inherently unstable, as investment only occurs if the expected return exceeds the cost of capital. The financial market causes uncertainty because random economic shocks can occur, and the uncertainty regarding these shocks is reflected in the interest rate. Therefore, understanding how the financial system works, along with the principle of liquidity preference among economic agents, is crucial to analyzing investment decision-making.

Keynes assumes that money, in addition to the basic functions attributed by neoclassicals (i.e., a medium of exchange and unit of account), also has intrinsic value, as it is the most liquid asset in the economy. Keynes believed that individuals hold money for speculation and as a precaution against unexpected events (Keynes, 2007).

Economic agents' savings are connected to the private sector through the financial system. Keynes assumes that economic agents prefer liquidity and are risk-averse while also holding money for speculative purposes. Thus, the demand for money is negatively related to the interest rate: the higher the interest rate, the lower the demand for money by individuals.

The interest rate, then, represents the opportunity cost of holding money, or, in other words, the foregone earnings from holding money instead of investing in the financial market. It is, therefore, a reward for the decision to save and lend capital under risky conditions (as the borrower may not be able to repay the debt in the future) to earn a greater return later (speculation motive) but renouncing the immediate liquidity of that asset. When the economy experiences a shock, savers will prefer to hoard wealth in the safest form possible (i.e., money). Conversely, those who risk lending their capital will demand higher compensation for the assumed risk. Thus, the interest rate rises, causing fluctuations in the financial market and, consequently, in investments. These fluctuations make investments inherently unstable[30] (Epstein; Gintis, 1995).

Since investment demand, in Keynesian analysis, is inherently unpredictable and continuously subject to sudden changes, this does not allow for a long-term theory to be constructed (Stockhammer, 1999). Thus, the central focus of Keynesian theory is short-term analysis, as the author did not explicitly describe the trajectory of the economy over a long horizon. However, Keynesian economists have argued that the long-term trajectory can be seen as multiple successive short-term periods, and these successions determine the long run.

Keynes analyzes the feasibility of undertaking a particular enterprise through the "marginal efficiency of capital." In simple terms, this is the quasi-rents expected by investors.

Investments depend on the incentive to invest, given the state of mind of capitalists regarding the current interest rate and expectations about future returns on capital (what the author called quasi-rents). The Keynesian investment function can thus be expressed as:

$$I = f(EmgK, i) \tag{2}$$

Where *i* is the current interest rate and *EmgK* is the marginal efficiency of capital.

In turn, the marginal efficiency of capital depends on business expectations. The greater the business expectations, the higher the marginal efficiency of capital; the higher the capital supply price, the lower the marginal efficiency of capital (Possas, 1999).

The decision to invest arises from the comparison between the marginal efficiency of capital and the interest rate. According to the author, "the effective rate of investment will be raised to the point where there is no longer any type of capital good whose marginal efficiency exceeds the prevailing interest rate" (Keynes, 2007). The entrepreneur compares the return on a financial asset with the investment made in the real sector; if the return on the invested capital is greater than the financial return on that amount, the investment will occur. If the risk premium for investing is large enough to induce entrepreneurs, the greater the propensity to invest. The greater the

[30] The higher the interest rate, the higher the expected future return on investments must be to compensate for the decision to undertake a particular venture.

uncertainty, the higher the risk premium and the greater the difference between the interest rate and the marginal efficiency of capital. Thus, the viability condition for acquiring a capital good is demonstrated through the following function:

$$\frac{\sum Ri}{(1+EmgK)^n} > P_O \qquad (3)$$

where P_O is the supply price of the capital good, and $\left(\frac{\sum Ri}{(1+EmgK)^n}\right)$ represents the updated value of the income generated by the investment. It will be viable to make the investment when $\left(\frac{\sum Ri}{(1+EmgK)^n}\right)$ (the expected profit in present value) is greater than the price of the capital good in the current period.

When an entrepreneur decides to undertake a given investment, they choose to market their product to consumers in the future, as the investment decision requires time to materialize. During this time interval between the moment the entrepreneur decides to invest and the moment the product is marketed, the entrepreneur incurs costs. The capitalist must therefore make the best predictions about how much the produced good will be worth in the future, the acceptance of the produced good in the market, as well as analyze and compare it with the costs incurred in the present: "whenever a decision has to be made, it will be taken into account considering this equipment and these stocks, but in light of current expectations regarding future costs and sales" (Keynes, 2007).

In turn, the marginal efficiency of a capital good is a function with decreasing returns to scale: "when investment in a given type of capital increases over a certain period, the marginal efficiency of that capital decreases as investment increases..." (Keynes, 2007). Several justifications are given for why returns decrease. First, in the short term, the demand for capital goods causes its offer price to rise. In this case, the marginal efficiency of capital tends to fall. Second, over a longer time horizon, there will be changes in expectations regarding revenues generated by the investment, as old investments will have to compete with new investments, that is, with capital goods that have more advanced technology and produce at lower costs, leading to a decline in the marginal efficiency of the old capital goods. According to Keynes (2007):

> If there is an increase in the investment of any kind of capital during a certain period, the marginal efficiency of that capital will decrease as the investment increases, partly because the prospects of profit will fall as the supply of capital is increased, and partly because, as a general rule, a pressure on the factories devoted to the production of that kind of capital will cause its supply price to rise.

Thus, new investments will continue until the point at which the marginal efficiency of capital of the last investment made equals the cost of the interest rate. From this point onward, investments in the financial sector will become more profitable. Consequently, the lower the interest rate, the higher the investments, since various projects that would not be justified at a higher interest rate become viable at a lower interest rate.

Finally, it is possible to observe that, despite presenting the "marginal efficiency of capital" as a future expectation of return, the idea is like the approach adopted by the neoclassical school. In this school, investment is viable up to the point where marginal revenue equals marginal cost; in Keynesian theory, investment is viable up to the point where the marginal efficiency of capital equals the interest rate.

Investment in Classical Marxist Theory

Marx considers that the volume of investments fundamentally depends on the rate of profit, which, in the capitalist system, tends to decline. However, Marx differs from the classical economists regarding the factors that lead to the fall in the rate of profit. Marx attributes this outcome to the economy's capacity to generate technological progress, a fact that makes production methods increasingly capital-intensive while simultaneously saving labor (Marquetti, 2002).

In his theoretical framework, Marx understands that the capitalist, a fundamental component of the system, is an agent driven by profit. The capitalist recognizes the need to accumulate capital to avoid being overtaken by competition. However, they will only put their capital at risk if, at the end of the capital reproduction cycle, the disbursement results in a greater amount than the initial capital. This gain between the initial capital and the capital at the end of the cycle – the profit (or surplus value) – is what motivates the capitalist to continue investing (Duménil; Lévy, 2003). According to Marglin (1987):

> The increase in value… becomes its subjective purpose, and only insofar as the appropriation of more and more wealth, in an abstract sense, becomes the sole motive of their activities does the capitalist act as such, that is, as a personified capital endowed with consciousness and will.

For any reason that the capital at the end of the cycle is less than the initial capital, the investment is not made. The increase in capital at the end of the reproduction cycle is the central objective of capitalist investments.

The total capital employed in the production process consists of constant capital (C) and variable capital (V). Constant capital is formed by the purchase of tools and raw materials used in the production process. Variable capital consists of the wages paid to workers, which are no more than what is necessary for the reproduction of the working class (the wage is for subsistence). Therefore, the product (Y) derived from the production process is given by:

$$Y = C + V + M \quad (4)$$

In the circulation of commodities, no matter how much they were sold above (or even below) their price, there would only be a transfer of value, not its creation. Marx argued that surplus value is a result of the production process. It is in the production process that Marx identifies the creation of surplus value (Lavoie; Rodríguez; Seccarecia, 2004). According to Marx, the production process occurs in three stages: in the first stage, the capitalist appears as a buyer, and their money is transformed into commodities. In the second stage, there is the productive consumption of commodities, that is, the production process that transforms raw materials into finished goods, aiming for the trade of a new commodity. The result of the production process is the creation of a new product with a value greater than the cost of its production. In the third stage, the capitalist returns to the market as a seller, and their commodities are once again transformed into money. The capitalist production process can then be illustrated with a diagram, where the dots indicate that the process is interrupted, and P indicates the production process:

$$D - M \dots P \dots M' - D'$$

When selling the new commodity, the capitalist obtains a larger amount of capital and can begin the same circuit again. The capital circuit generates surplus value, which is the source of more capital, which, in turn, generates more surplus value, and so on, in an endless cycle of accumulating more capital.

But when, during production, is surplus value created? When the capitalist decides to produce a certain product, they purchase raw materials, tools, machinery, and labor that will be necessary to shape and produce a new commodity. The material inputs (raw materials and tools), by themselves, do not generate profit. Profit arises from the production carried out by workers, which is not fully compensated through wages. In turn, workers accept this condition because their only option is to sell their only commodity: their labor power. Surplus value is therefore created in the production generated by the worker, which is compensated by the capitalists through subsistence wages (Marquetti, 2002).

Another way of looking at the issue is: when workers sell their labor power to the capitalist, and the capitalist appropriates part of their labor, that is, there is a period worked by the worker (which generates production) that is not compensated by the capitalist. Therefore, surplus value (M) is the difference between the product and what is paid in wages. It can also be defined as surplus labor, that is, the difference between the labor employed in the production process and the labor socially necessary for the reproduction of the worker (Heilbroner, 1999).

In this sense, the rate of exploitation, or the rate of surplus value (M^*), is the relationship between surplus value and variable capital $\left(M^* = \frac{M}{V}\right)$. In other words, the rate of surplus value is the relationship between surplus labor and the labor socially necessary for the reproduction of the worker. The increase in surplus labor (M), or the reduction of

necessary labor (V), due to higher productivity, a reduction in real wages, or the extension of the workday, raises the degree of exploitation of the worker.

Regarding the conception of the interest rate in the Marxist framework, it is nothing more than a derivative form of profits. Surplus value, generated in production and therefore determined in the real economy, forms the basis of the interest rate in the financial market. Interest is established through the relationship between the supply of resources by the financial market and the demand for capital by capitalists and is nothing more than the financial share of profits. In this way, interest cannot be higher than profits, as it constitutes a portion of them. Both commercial capital (value transfer) and interest are derivative, parasitic forms of production and surplus value extraction, appropriating part of the surplus. Therefore, even if the capital originating from the financial system was not directly involved in the creation of a given commodity, it is the profit rate of companies that will determine the relative share of the interest rate in the financial market (Marglin, 1987).

Marx's pessimism about the future of capitalism stems from the fact that he believed the stagnation of the capitalist economy would result from the system's own contradictions, which in turn would lead to the fall of the rate of profit. Ultimately, in Marx's view, the capitalist system would give way to socialism.

For Marx, the declining tendency of the rate of profit is a consequence of the intensification of production through constant capital, which is precisely the capital that does not produce surplus value. As shown, it is the worker's labor that adds value. However, the organic composition of capital – the relationship between constant and variable capital $\left(\frac{C}{V}\right)$ – tends to increase due to the growing use of constant capital. This phenomenon occurs because of competition between companies. Competition leads companies to intensify production through machines, as it is in machines that technology for production is found, and it is through competitive products, rich in quality, that the capitalist will survive against the competition of other companies (Duménil; Lévy, 2003). This is why Marx argued that once surplus value is obtained, almost all of it should be allocated to investments (capital accumulation) as a condition for the survival of the capitalist. In summary, the rate of profit tends to fall due to technological progress, which saves labor and intensifies production through machines (Palley, 1999).

The rate of profit is the relationship between the amount of profit and the stock of capital $\left(\frac{P}{K}\right)$ and constitutes the central point of Marxist economics. However, Marx argued that even though the tendency of the rate of profit is declining, it would not necessarily reflect in lower absolute profits. This relationship merely shows that the production process is more capital-intensive. Because of this, Marx believed that total profit would continue to increase, even with the fall in the rate of profit. However, with the production process becoming more capital-intensive, the amount of capital required for companies to enter a particular market would be increasingly larger (Marquetti, 2002). The result of this larger amount of capital required in production is that only large companies would remain in the market (characterizing an oligopolistic market). Small and medium-sized businesses would be swallowed by competition, along with numerous jobs, leading to an increase in the unemployment rate. This growing increase in

unemployment, along with the lack of purchasing power, would impact the active companies in the market through crises of underconsumption or realization[31].
It is from Marx's conclusions regarding investments in constant capital that the Kaleckian approach emerges, linking the short-term dynamics of accumulation with the Marxist long-term theory (PALLEY, 1999).

Investment in Kaleckian Theory

The Kaleckian arrangement links a short-term situation with a long-term situation (Stockhammer, 1999). The goods market, in Kaleckian theory, uses a Keynesian construction, in which production depends on effective demand that, together with technology, affects the level of employment in the labor market, raising wages. In turn, the labor market affects profitability, having repercussions on investment spending, aggregate demand and the goods market (Halevi; Kriesler, 1991).

Kalecki agrees with Keynes in assuming that investment is the main variable to explain the level of income, so that, also for Kalecki, it is investment that determines savings. "The expenditure made on the purchase of investment goods instantly generates profits, savings and, last but not least, releases an equal amount of liquidity at the disposal of the group of capitalists in the banking system" (Possas, 1999).

However, Kalecki introduces the political evaluation of firms and income distribution as additional factors capable of influencing the level of economic activity.

To analyze Kaleckian theory, it is necessary to assume some premises pointed out by the author. According to Miglioli (1980), they are: (i) firms have some degree of control over the prices and market of their products, that is, imperfect markets predominate; (ii) society is divided into classes: the working class and the capitalist class; (iii) workers spend everything they earn; and (iv) the productive capacity of companies does not change within a given production period (López; Puchet; Assous, 2009).

Kalecki divides the economy's production into three departments. Department 1 produces investment goods, Department 2 produces consumer goods for capitalists, and Department 3 produces consumer goods for workers. Table 1 shows the division of the departments[32], the way they are subdivided between profits (P) and wages (W), resulting in the goods produced within each of them:

[31] Realization crises, approached from the supply perspective, are crises of disproportion between production and consumption; seen from the demand side, they are considered as the result of underconsumption by workers and of global demand, including capitalist consumption and investment spending. The theory of workers' consumption can be seen as a particular step in the theory of insufficient effective demand.
[32] Kalecki assumes that intermediate goods (inputs) are produced by the departments that use them.

Table I: Matrix of Production Departments in Kaleckian Theory.

Departament 1	Departament 2	Departament 3	Total
P_1	P_2	P_3	P
W_1	W_2	W_3	W
I	**C_c**	**C_w**	**Y**

Source: STOCKHAMMER (1999).

The output (Y) of the economy is then determined by profits (P) plus wages (W):

$$Y = P + W \quad (5)$$

Otherwise, this equation can be rewritten as follows:

$$Y = I + C_c + C_W \quad (6)$$

where *I* is gross investment, *Cc* is capitalist consumption, and *Cw* is worker consumption. As mentioned above, workers spend all their wages[33], so the number of sales to workers is equal to the wages paid, i.e., *W* = *Cw*. Therefore:

$$P + W = I + C_c + W \quad (7)$$

Eliminating *W* from both sides of the equation, we have:

$$P = I + C_c \quad (8)$$

This equation states that total profit is determined by capitalists' investments and consumption. In turn, Kalecki assumes that capitalists' consumption corresponds to a stable pattern, independent of profit variations, so that it loses greater importance when determining profits. Therefore, what substantially determines profits are the investments made: the greater the capitalists' expenditure on investment, the greater the amount of profits. In other words, capitalists' profits result from the volume of sales they make to themselves. Hence Kalecki's proposition that workers spend what they earn, and capitalists earn what they spend (Kalecki, 1985).

[33] The profit of department 3, which produces consumer goods for the workers, is made up of the wages of the workers in this sector, plus the consumption of the workers in departments 2 and 3. However, department 3 pays wages in the amount of W3, which returns to this same department in the form of consumption by the workers. Thus, the profit of department 3 is given by: $P_3 = W_1 + W_2$

Through the departmental division, it is possible to observe that profits depend on the difference between the product generated in each department minus wages ($P = Y - W$). Therefore, if the relationship between wages and profits were constant, a certain variation in the investments of departments 1 and 2 could employ more workers and, consequently, increase wages. However, Kalecki states that the proportions between investments and wages do not remain constant over time due to distribution factors, that is, the factors that determine the relative share of wages in national income. According to Kalecki, distribution factors consist of i) the degree of monopoly; ii) the relationship between the costs of intermediate goods (inputs) used in production and the wages paid; and iii) the sectoral composition of production (Lavoie; Rodríguez; Seccarecia, 2004). These three factors act together, causing wages not to rise proportionally in relation to new investments.

The production of a given product is made up of the sum of inputs (N), plus wages (W), plus profits (P), that is, $Y = N + W + P$. In turn, the relationship between profits, inputs and wages can be expressed by a variable k, so that:

$$\frac{P}{N + W} = k \tag{9}$$

The variable *k* shows the monopoly power of industries: the higher the value of *k*, the greater the difference between profits and direct production costs, that is, the greater the mark-up that the company can charge in addition to costs[34] (Possas, 1999).

Companies in imperfect competition, whether due to industrial concentration or advertising, real or fictitious differentiation of their goods, can maintain idle production capacity while having power over the determination of the price of the product in the market where they operate. Therefore, they can determine a mark-up on production costs. To determine the price of the product, each company takes its average production cost as a basis and adds its profit margin. The greater the monopoly power of the company, the greater the difference between the price it charges in relation to its cost and, therefore, the greater the profit (Krawiec; Szydlowski, 1999).

Regarding the second factor of income distribution – the relationship between inputs and wages – inputs are determined by the laws of demand, so that their variations tend to be much greater than wage variations. Furthermore, inputs have an inelastic supply curve, that is, an increase in demand is not accompanied by increases in production. Therefore, when production increases, the price of input also increases due to the increase in demand for these goods. In turn, the price of the products produced is made up of the sum of inputs, wages and profits. Thus, the higher the cost of input in relation

[34] There are four factors that can modify a company's monopoly power: the process of concentration of industries; increased competition without reducing the price of the product; maintaining the profit margin when indirect costs increase over direct costs, through tacit agreements between those involved; and the bargaining power of unions, since the higher the mark-up, the more power workers will have to negotiate salary increases (Kalecki, 1985).

to wages, the higher the profits will be in relation to wages, since firms apply a mark-up to their production costs.

Regarding the sectoral composition of production, the different sectors in the economy have different relationships between profits and wages. Therefore, the greater the share of highly profitable sectors of activity in the economy, the national income will be composed of a large share of profits and a small share of wages.

Profitability is the central point in the decision to invest within Kaleckian theory. For the author, the viability of new investments is the result of resources obtained in the past and not through expectations, since the author avoids using the term "marginal efficiency of capital". For Kalecki, the greater the profit obtained in previous periods, the greater the investments will be in subsequent periods (Possas, 1999).

In the Kaleckian framework, capitalist does not evaluate investments daily but rather over periods, allowing market fluctuations to reveal their consequences. Kalecki assumes that investment decisions are not made abruptly but are instead studied and implemented according to the approved project schedule. Even in the face of a temporary market shock during the execution of an investment, such a shock would not necessarily lead to the modification or abandonment of the project. This perspective aligns with the idea that economic cycles have their own dynamics, influenced both by external factors and past decisions of economic agents. Thus:

> The announcement, and even the creation of a new tax, to finance an increase in government spending will not bring about an immediate reduction in capitalists' spending, because they will wait until the end of the current decision period to see what happens. If no reduction in investment and consumption occurs during this period, the increase in government spending will expand aggregate demand, taking with it profits, so that after-tax profits would not be reduced. And if after-tax profits do not fall during this decision period, then the decision to invest, future investments and future profits, will probably not fall (Lopez; Mott, 1999).

Kalecki did not see the need to differentiate the likely impact of changes in transitory expectations from permanent expectations on the economic variables of investments. It was for this reason that, near the end of his life, Kalecki criticized Keynes and the psychological emphasis of his theory when he wrote: "Keynes failed to distinguish between investments and investment decisions; he also failed to show that the profit of capitalists [...] is the main source of economic decisions" (Kalecki, 1985).

Kalecki's theory assumes that investments are financed by the equity of companies and their owners, but that they can also be increased through resources from the financial sector. However, the cost of financing investments for Kalecki differs from Keynesian assumptions. In his theory, Kalecki distinguishes the purpose of short-term and long-

term interest rates. As for short-term interest rates, they do indeed present large fluctuations (exactly as Keynes claimed). However, those that affect investments are long-term ones, which in turn remain relatively stable over long periods and therefore marginally influence the investment process. Mathematically, this observation can be expressed as:

$$b = \frac{\left[\frac{P}{J}\right]}{i} \tag{10}$$

The variable b is the ratio of the profit rate $\left[\frac{P}{J}\right]$ (where P is profit and J is the sum of input and wages) to the interest rate i. Since the interest rate for investments (long-term interest rate) is stable, investments are substantially influenced by direct costs: changes that reduce the real wage, for example, tend to increase profits P and, consequently, b, resulting in greater spending on investments.

Because these are imperfect markets, Kalecki admits that firms do not use all of their capacity, aiming to maintain a safety margin so that new firms do not enter the market (especially in an oligopolistic market composed of large corporations). Through idle capacity, when faced with the possibility of a new firm entering the market and competing for profits, existing firms can increase production, causing the price of the product to fall. The reduction in the price of the product will also cause profitability to fall, reducing the incentive for a new firm to enter. The reason for the existence of idle capacity in the industry can also derive from other factors:

> ... Firms will maintain excess capacity to maintain flexibility in the face of unexpected events... There may be a variety of technical reasons. Indivisibilities in the production process may make it impossible for (...) machines to synchronize production. Or, if machines work full time they may deteriorate more quickly, which may be rational to maintain excess capacity... Excess capacity may be the result of the irreversibility of many projects. Since they cannot be easily undone, idle capacity may exist simply because it would be too expensive to remove them, and they can be put back into use if demand increases (Stockhammer, 1999).

The meeting of the short and long term in Kaleckian theory occurs from the inclusion of a new factor: technological innovations.

In the short term, aggregate demand determines the level of output in goods markets, which in part determines the level of employment in the labor market. The outcome of the labor market determines the relative bargaining power of workers and firms, which has an impact on real wages and the mark-up of firms. Wages and employment then determine consumption, which feeds aggregate demand. In turn, the mark-up determines the rate of profit, which has an impact on investment spending: the higher the mark-up

of firms, the higher the profitability, resulting in greater investment spending in subsequent periods.

According to Palley (1999), this short-term construction is linked to the long-term process through investment spending. Investment spending intensifies production through fixed capital, since firms choose technologies that increase their bargaining power vis-vis workers, reducing their participation in production, in addition to seeking to add technology to products, thus seeking greater market share. In this way, production is intensified in constant capital, expanding productive capacity but saving labor. This relationship ends up resulting in an increase in unemployment, reducing the bargaining power of workers and, consequently, reducing wages. This relationship (investment in fixed capital while the production process saves labor) generates, in the long term, a Marxist crisis of accumulation and, therefore, a fall in the rate of profit.

Final Considerations

An analysis of neoclassical, Keynesian, Marxist and Kaleckian economic theories reveals the richness and diversity of approaches to understanding how economies work and how they understand the investment process. Each of these theories offers a distinct set of assumptions, methodologies and conclusions, reflecting different views on economic mechanisms, market dynamics and the role of institutions.

Neoclassical theory, with its focus on market efficiency, optimal allocation of resources and the balance between supply and demand, offers a robust view of market forces under ideal conditions. However, its limitations become evident when it is analyzed considering the factors that drive investment. The emphasis on the rationality of economic agents and conditions of perfect competition often neglects the complexities and imperfections of the real world.

Keynesian theory sparked a revolution by highlighting the importance of uncertainty, the mood of the capitalist and the role of aggregate demand. However, when analyzing investment decisions – and the contribution that uncertainty and the mood of capitalists make to the economy – an arrangement that emerges from the neoclassical perspective is still evident to some extent.

Marxist theory offers a critical perspective on capitalism, emphasizing class relations, the exploitation of labor, and the dynamics of capital. It provides a deep analysis of the structural inequalities and systemic crises inherent in capitalism. This theoretical framework highlights the factors that drive capitalists to invest. For Marx, investment occurs only in circumstances that allow capital to grow. In other words, capitalists are driven by profit, which means that investment occurs only under this condition. In this context, the exploitation of workers is fundamental, since it is through this relationship of exploitation that surplus value arises.

Kaleckian theory, influenced by Marxism and Keynesianism, emphasizes the importance of income distribution and effective demand. Kaleckian theory has contributed significantly to the understanding of market imperfections and the consequences of the

concentration of economic power. Analyzing the role of monopolistic firms and the interaction between investment and profits provides valuable insights into the dynamics of economic growth and instability.

The analysis of these economic theories provides a broad framework for understanding investment decisions. Investment decisions are one of the pillars of economic functioning and are influenced by different factors depending on the school of economic thought adopted. By integrating neoclassical, Keynesian, Marxist and Kaleckian approaches, it is possible to obtain a broader and more balanced perspective on what drives and directs investment in an economy.

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