

AN AUSTRIAN CRITIQUE AND ALTERNATIVE TO DISCOUNTED CASH FLOW ANALYSIS

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Resumen: El Flujo de Caja Descontado es considerado, entre los académicos, como uno de los métodos más precisos para prever el valor “justo” de un activo. Sin embargo, como explica la Escuela Austriaca, los fenómenos sociales son complejos y no pueden modelizarse. Los hechos sociales implican un número incontable de variables y una incertidumbre radical y permanente. En esta realidad, el presente trabajo presenta una crítica de la perspectiva del flujo de caja descontado, e introduce pautas para el desarrollo de una alternativa austriaca de base empresarial. Los emprendedores son los individuos que enfrentan la incertidumbre, mientras buscan beneficios y moldean el futuro, con el objetivo de satisfacer las necesidades de los consumidores. Es a partir de la calidad del empresarialismo que las empresas sostienen sus actividades en el tiempo, desafiando turbulencias y creando/explotando oportunidades. Los inversores, más que modelizar los precios de las empresas, deberían analizar la calidad de la empresariedad de las empresas en las que pretenden invertir, recompensando y confiando en la empresariedad que consideran más rentable en el futuro.

Palabras clave: finanzas; inversiones; asignación de activos; empresariedad.

Clasificación JEL: B53; G11; G12; G32.

Abstract: Among scholars, Discounted Cash Flow is considered one of the most precise methods to preview the “fair” value of an asset. However, as the Austrian School explains, social phenomena are complex and cannot be modeled.

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Social facts involve uncountable variables and a radical, permanent uncertainty. So, this work presents a critique of the Discounted Cash Flow Perspective and introduces guidelines for the development of an Austrian entrepreneurial-based alternative. Entrepreneurs are individuals who bear uncertainty, while seeking profits and molding the future, aiming to satisfy consumer needs. It is through entrepreneurship that firms sustain their activities over time, challenging turbulences and creating/exploiting opportunities. Then, more than modeling prices of firms, investors should analyze the quality of the entrepreneurship of the firms they intend to invest in, rewarding and trusting those they see as most profitable in the future.

Keywords: finance; investment; asset allocation; entrepreneurship.

JEL Classification: B53; G11; G12; G32.

1. Introduction

Discounted Cash Flow (DCF) is considered (see e.g., Koller, Goedhart and Wessels 1990 [2020], 177; Gilbert 1990) the most accurate method to measure the value of an asset. It is based on the premise that the present value of an asset is a result of its future cash flows (Damodaran 2012).

However, is Discounted Cash Flow, in its perspective, compatible with the Austrian subjective understanding of the market process? Does DCF account for uncertainty about the future? Furthermore, does DCF consider the entrepreneur's role in the market process? These are just some of the questions that an individual may ask about the concrete applicability of DCF in an uncertain, subjective world. In this context, this paper presents a critique of DCF and the Austrian alternative of entrepreneurial qualitative analysis to guide investment decisions and asset allocation.

The work concludes that, while the DCF method can be used to speculate the price of an asset, it should be viewed as a tool for entrepreneurial speculation rather than a technical model for determining the fair price of an asset. Indeed, this work argues that objective anticipation of future cash flows is impossible, as

future outcomes are shaped by individual subjective and sovereign actions over time. Moreover, social reality is complex and cannot be constrained to certain variables: this fact undermines the possibility of an accurate Discounted Cash Flow calculation.

According to the Austrian conception of market process, investors can develop an alternative methodology for asset allocation. To do so, they must pay more attention to a qualitative analysis of entrepreneurship. Entrepreneurs challenge uncertainty while seeking profits, creating better opportunities for future profits, and consequently, for higher prices of the companies they own. Entrepreneurs shape the future by risking their capital to arrange productive processes that satisfy consumers and generate profits.

Beyond calculating whether the price of an asset is “cheap” or “expensive”, investors must conduct a thymological analysis about the entrepreneurial processes. This analysis aims to identify which entrepreneurs are better suited for the future they speculate. In a dynamic and creative world, potential gaps in current prices represent only a small fraction of profit possibilities.

2. Discounted Cash Flow

As the starting point to achieve the goals of the present work, it is essential to present the characteristics of Discounted Cash Flow. *Discounted Cash Flow* is an investment tool based on the idea that the value of any asset relies on the present value of its future cash flows (Damodaran 2012; Graham and Dodd 1934; Kruschwitz and Loffer 2006, 3; Gilbert 1990). In this analysis, models try to calculate the asset’s intrinsic value.

For the Discounted Cash Flow perspective, the stock value is derived from future returns that are brought to the present and discounted under a Discount Rate (Koller, Goedhart, and Wessels, 1990 [2020], 27-28). This constitutes the Net Present Value (NPV) of the stock, which can be estimated using the Discounted Cash Flow (DCF) model.

Discounted Cash Flow has an intrinsic quantitative component. According to Graham and Dodd (1934), investment analyses have both quantitative and qualitative bases, and the concept of margin

of safety emphasizes the quantitative aspect even further, as explained in this work.

The common belief is that, although intrinsic value and market prices may currently differ, they will eventually converge over time (Damodaran 2012). Thus, market agents may realize that they have erroneously undervalued (or overvalued) the price of an asset, and that this price will eventually converge to its fundamental value.

The Discounted Cash Flow perspective is based on the present value of future cash flows. Therefore, the value of the company is related to its ability to generate profits for stockholders. The present value is calculated using the basic mathematical formula shown in Figure 1, which guides Discounted Cash Flow calculation.

FIGURE 1. DISCOUNTED CASH FLOWS CALCULATION

$$DCF = \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \dots + \frac{CF_n}{(1+r)^n}$$

To calculate the present value of future cash flows, and investor must determine a Discount Rate that will bring future values to present value. Although different formulas can be used, the most common and preminent is the Weighted Average Cost of Capital calculation, explained in Figure 2.

FIGURE 2. WEIGHT AVERAGE COST OF CAPITAL CALCULATION

$$WACC = \frac{D}{D+E}K_d + \frac{E}{D+E}K_e$$

In general, companies have two broad ways to finance their activities: *debt and equity*. Debt refers to loans from banks, investors, and pension funds, while *equity*, to direct investment through capital-owners. The cost of equity can be calculated using different methods, including the Capital Asset Pricing Model (CAPM), the Dividend Discount Method, and the Bond Yield Plus Risk Premium Approach. CAPM calculation (shown in Figure 3) is the most

common, expressing the return the equity requires to be attractive and to compensate the risk involved in the business operation.

FIGURE 3. WEIGHT AVERAGE COST OF CAPITAL CALCULATION

$$E(R_i) = R_f + \beta_i(E(R_m) - R_f)$$

Discount Rates are, for Gilbert (1990), the rate an investor requires to be induced to invest in the asset. The author also presented six important aspects of the Discount Rates: (1) they are affected by the market; (2) they vary with time; (3) they depend on what is being discounted; (4) they must be risk adjusted; (5) are based on yields available on alternative investments; and (6) they are inflation¹ adjusted.

According to Damodaran, this valuation perspective is more applicable to firms where future predictions can be made. He also notes that Discounted Cash Flow modeling does not work for firms in distress, cyclical firms, turnaround processes, and firms involved in acquisitions. In such situations, models must be adapted (Damodaran 2012).

3. An Austrian critique of DCF

With the previous explanation of the Discounted Cash Flow, it was possible to understand its characteristics. It is now possible to present a critique of the subject. Discounted Cash Flow suggests that the quality of decision-making and entrepreneurial judgment is already implicit in its price-modeling. While a better-managed company may achieve higher future flows, it is important to note that this approach has inherent quantitative and objectivist problems.

Specifically, this modeling attempts to provide a scientific aspect to a naturally speculative activity: future speculation². All future speculations are nothing more than entrepreneurial

¹ Inflation was used by Gilbert (1990), in the neoclassical sense.

² Future speculation is always an entrepreneurial activity, and not a scientific one.

activities, attempting to estimate the future in the best possible way. In the Austrian School, the entrepreneur's primary mission is to bear uncertainty to obtain profits (Rothbard 2004; Salerno 2008). The entrepreneur appraises about future values, but these are not certain and may does not encompass all aspects of reality. Investment appraisals are considerations of future prices. They are analysis of the markets that will guide valuation and allocation (Herbener and Rapp 2016; Rapp, Olbrich and Venitz 2017).

Rothbard stressed that future values are unknown in a dynamic real world. These values are estimated by entrepreneurs who speculate about the future. For him, entrepreneurs engage in arbitrage, and the quality of their forecasts is an essential part of their income (Rothbard 2004, pp. 509-555).

Information is not given, and knowledge about the future is even more imprecise. Individuals possess only dispersed bits of knowledge about future events. It is impossible to perfectly comprehend the future. Each human mind has an intrinsic ability to create new causal relationships that will shape the future.

A company is not simply a collection of capital goods that are automatically put into production to generate profits. A company is formed by decisions made by individuals with the ability to perceive subjective cause and effect relationships, selecting the most appropriate means to achieve their goals.

The Discounted Cash Flow cannot fully account for entrepreneurial quality, as it is impossible to comprehend all the variables involved in this process. With the increasing commercial opening since the end of World War II (see, for example, Audretsch and Turik 2000; Hummels 2007) and the improvement in communication and transportation, markets are experiencing a period of international integration that is unprecedented in history. Each company must deal with a multitude of variables. Thus, companies must be able to adapt more quickly to changing scenarios, which highlights the role of the entrepreneur in rearranging resources in the productive process.

While the neoclassical positivists were concerned with general equilibrium states that could be magically achieved, Austrians were interested in how markets are arranged, creating levels of coordination for individual sovereign actions. Austrians are not

concerned with how reality should be, but with how reality is. (Mises 1998).

Thus, Austrians do not look to an ideal type of agent and action (the famous *homo economicus*³) but to a realistic view of human action. Mises conceived a *homo agens* who makes mistakes, precisely because he does not possess all the knowledge⁴ and ability to estimate the future.

Men have not only subjective preferences, but also subjective abilities to perceive relationships between goods (causes and consequences or means and ends). For Menger, the property of an entrepreneur is not just a quantity of capital goods. His motivations (aka ends) give meaning to a complex of heterogeneous capital goods, transforming them into a unified business firm (Salerno 2008). Thus, it can be implicitly understood that the synergies between these capital goods arranged by the entrepreneur result in a unique position and value for the firm.

Rothbard (2004, pp. 509-555) recognizes that the quality of forecasts is what determines profits and losses. Continuing the Misesian comprehension of market process, Rothbard sees permanent uncertainty as its key feature. And, adopting a more subjective and realistic understanding of human coordination than Hayek and Kirzner, he does not believe that men strive to correct “mispricings” and miscoordinations, but rather that they create future prices through their actions.

It is also important to understand that capital goods are heterogeneous not only in terms of their physical features, but also in terms of the different roles they play in the different production plans that entrepreneurs develop based on their subjective knowledge (Kirzner, 1966; Foss, Foss, Klein, and Klein, 2007).

³ To better understand the concept of *homo economicus*, it must be noted that the *homo economicus* is a maximizing agent who possesses all the information/knowledge available in the markets and makes perfect economizing decisions. Other schools of economic thought, such as the behavioral school, also criticize the concept of neoclassical rationality.

⁴ Related to knowledge, it must be understood that knowledge cannot be centralized. Entrepreneurial knowledge, as explained by Huerta de Soto (2015), has its particularities, and exist only in a specific situation for a specific individual. Moreover, there is another perspective of knowledge, the future knowledge, or expectations, that cannot be centralized and only exists subjectively in the mind of the individual.

The entrepreneur cannot simply be a productive function, “capital”. Moreover, profits do not come as a direct result of the employment of capital, but of the entrepreneurial ability to anticipate future market wants. Indeed, all these approaches partially agree on that: the main difference is that the Kirznerian alertness looks more to the present, with the seizure of “existing” opportunities that are “exploited” by the entrepreneur.

Entrepreneurs are the individuals who bear uncertainty, while seeking for profits. They are the ones who establish new relations of production, assembling capital goods to supply consumers with the goods/services they want. In Austrian comprehension, since the economy is an uncertain process that depends on the interaction of different people in markets, any action will be speculative. Profits, as Mises (1998) argued, come from the ability of entrepreneurs to estimate the future.

If the future cannot be molded, any attempt to “predict” is just an estimation. Entrepreneurship, thus, is always a speculation about what will happen. Of course, through the ability to understand the markets and behavioral patterns, entrepreneurs can develop mechanisms to better estimate other people’s actions in order to profit from their demands.

4. Evaluating entrepreneurship and its relevance to asset allocation

As the final part of the present paper, in order to achieve its main goal, this part will present an Austrian alternative to allocate assets and manage portfolios, evaluating entrepreneurship and its role in the market process.

Entrepreneurship quality is mainly related to the ability to generate profits and value for shareholders and consumers. But, as companies face ineradicable uncertainty, it is also related to the ability to withstand market turbulence.

One relevant feature of markets since the end of the gold standard has been the massive monetary injection to stimulate the economy. However, this stimulus works artificially in the short run, creating boom and bust cycles. In the face of false signals and incentives, agents make equivocal decisions, which undermine the

productive structure and the corporative ability to generate profits (for a deeper comprehension, see Hayek 1931; Garrison 2001).

Also, the nature of organizational work is changing on a large scale. Previously, tasks were more controllable, and businesses focused on operationalizing established productive processes. However, the economy is shifting towards a creative economy. Technological advancements, such as the mechanization of processes, have enabled workers to focus more on creative tasks.

Besides, if the future is something that needs to be created, it is also difficult to estimate what it will be. While individuals can estimate certain scenarios (making appraisals of future prices), it is important to consider that much of what will happen cannot even be modeled, as it only exists in the imagination of one (or some) entrepreneur(s). As Lachmann (1943; 1956; 1971) argued, expectations are always subjective.

History gives us classical examples to support this claim. The recent case of Apple is particularly revealing: the company was practically bankrupt in the mid-90s. After Steve Jobs returned, Apple became the most valuable company in the world due to the disruptive products and services released by the new management. However, in 1995, how could an investor estimate the value of Apple's future products, such as the iPod and the iPhone? These devices did not yet exist, and most consumers were unaware of how they could satisfy consumers and generate profits.

Evaluating entrepreneurship and its effects on prices

It must be stressed, then, that all highlighted facts confirm the increasing relevance of entrepreneurship⁵ in the face of the growing complexity of the 21st Century economic environment. This is particularly true for investment decisions. When looking to the future, investors should not rely solely on static metrics based on

⁵ As Foss and Klein (2006) stated, entrepreneurship can be also executed by employees and subordinates. However, they exercise derived judgment that comes from the original entrepreneurial judgment made by the entrepreneurs and the capital-owners of the company.

current price levels or models that try to guess arbitrarily the future. With his subjective understanding (preferences, causes and consequences, and expectations), he must evaluate the relevance of entrepreneurship to achieve profits.

When Mises admitted that the consumer is the captain of the economy (Mises 1998), he meant that all entrepreneurial actions aim at the consumer. Without consumers, there are no sales and no profits. However, it is the entrepreneur who commands the economic changes. He bears uncertainty, organizes heterogeneous capital, and creates opportunities that other individuals cannot even imagine. Any model, even when trying to be scientific, cannot estimate future creations that do not yet exist.

Investors must be cautious when comparing different assets are someone claims that one is expensive and the other is cheap. Therefore, it is important to reward the entrepreneurship that is trusted and evaluate it positively. When comparing the enterprise with its competitors, they are willing to pay more to buy a stake. A well-managed company is judged by its organization of production and judgments, not just in a historical sense, but also in terms of future expectations and appraisals.

Mises (1957) considered thymology as the knowledge of the social environment, contrasting thymology and praxeology. Individuals make thymological analysis of other individuals' actions, drawing insights from history⁶ and perceiving patterns of behavior. Men understand and comprehend how men act under the environmental conditions they are inserted (Branda and Silva 2015).

With this comprehension, investors premiums (and pay premiums for) leading corporations⁷. As the market process is always driven by entrepreneurs, it is relevant to highlight the role of entrepreneurship in leading efforts to create the future. Entrepreneurs are the captains of the economy, proposing new solutions while

⁶ History does not include just past facts, but also the present. The present is a consequence of past decisions, and its interpretation also uses the philosophy of history.

⁷ The term "leading corporations" should be understood in a dynamic sense here. Investors reward not only the current leading corporations in established markets, but also the companies that are expected to lead the future in the economic transformation of the industry.

bearing uncertainty to seek profits. Thus, investors naturally reward companies led by trustworthy and distinguished leaders, evaluating their stocks at higher prices.

Elon Musk is a good contemporary example of this characteristic. While Tesla may be considered overpriced compared to its competitors, investors base the stock value on future incomes that will pay returns for their investment. They reward the leadership of figures like Musk in the market process, trusting that these entrepreneurs could forecast the markets and to create profitable opportunities.

Companies with perceived better entrepreneurship or startups led by entrepreneurs with a good track record often led investors to pay a premium on their prices, perceiving a higher probability of estimating future returns to a certain degree. If the returns, when brought to the present, can generate more profits using the selected means, naturally, then the prices will naturally be higher.

Furthermore, Marion Ceolin (2019) stated that serendipity is a relevant aspect of the economic facts. Social phenomena are so complex that men cannot include each aspect of reality in their analysis. Therefore, unexpected facts may arise, and entrepreneurs must capitalize on them.

The same applies to turnaround processes. In this kind of process, in which companies change their market strategy, typically linked to a change in management, asset prices are primarily influenced by confidence in the leaders driving the change.

If the process is led by a reputable entrepreneur or an experienced team, investors tend to reward the confidence they have in the change perspective, as long as it aligns with the perceived changes the company needs.

In a new scenario where objective profits are difficult to determine, what happens is a change in the perspective of the entrepreneurial decisions involved in these processes. They establish a premium paid over the present returns, as they trust in the decision-taking quality of the turnaround process.

On the other hand, we must consider that analysis is not based just on the past. Investors must also consider future expectations, contrasting its data with their future considerations, using their thymological ability. Thus, the most efficient model today may not

be the same in the future. Investors have expectations, but expectations are imprecise bits of knowledge and models should only be used as a tool.

The Taylorist model of management is an example. In a managerial economy this model optimized costs and productivity in the assembly line. However, companies based on this model found themselves at a disadvantage when the economy became more creative. Investors should have perceived that markets were changing, undervaluing this management model by comprehending its weakness for a new market paradigm.

As the quantitative analysis does not provide adequate answers, the qualitative analysis gains special attention. We must consider that all valuations will be subjective. Each human being has a different stock of knowledge, a different ability to create new opportunities, and a different capacity to judge perceived opportunities.

Portfolio management in a subjective, uncertain environment

The investor is a financial entrepreneur who bears uncertainty to seize opportunities. Compared to the analysis of entrepreneurial action based on the combination of the three major Austrian approaches, the investor takes similar actions to the entrepreneur: (1) he uses his subjective ability to be alert, perceiving and creating new investment opportunities (see Kirzner 1973); (2) among the perceived/created opportunities, he chooses the ones that appear more attractive in this action framework, making judgments under uncertainty (see Foss and Klein 2006; Foss *et. al* 2007); and (3) he puts his decisions into practice, organizing his portfolio to achieve the expected return (see Rothbard 2004; Mises 1949). The entrepreneurial activity, as well as the investment activity, is subjective. Each investor has different ends. And to achieve them, investors will choose between different available means.

Some investors may prefer more secure investments, aiming for a retirement portfolio. Others can choose companies that operate in more stable markets with higher dividend yields. Still others prefer speculative assets, such as turnarounds or startups, aiming for higher profits in the future. The factors that impact these

choices are diverse, including the investor's age, income level, culture, and prior background. Each investor has a different time preference framework that guides his actions.

In this process, the qualitative analysis gains highlight. Investors *ex-ante* evaluate assets. They base their appraisals on future prices, expectations and a thymological comprehension to guide their considerations. Based on that, they will shape their portfolios to generate the desired benefits.

The quality of the enterprise is a relevant factor in an uncertain environment. Social phenomena are complex, barely understandable, and dependent on human decisions, for which there is no linear pattern. That reinforces the relevance of entrepreneurship in markets.

Attempts to model this complex reality demonstrate some scientific petulance, as if they could simulate and shape reality. There is an apparent disregard for human action, which is subjective and occurs in an uncertain environment.

Social phenomena are so complex and influenced by a large set of variables that scientists and analysts cannot even perceive that, in the context of innate knowledge dispersion, any effort to model the fair value of an asset is nothing more than treating the market process as a clog of a machine.

In this uncertain scenario, organizational entrepreneurship is not just a productive function that can be objectively evaluated. Indeed, it is the ability to judge and to organize the production that makes the best use of the capital invested. By selecting, acquiring, and organizing capital goods, returns on invested capital can be generated.

Analysts strive to determine the fair value of assets, choosing premises and variables arbitrarily. Otherwise, from the investor's subjective perspective, a company's decision-making quality can be more easily understood and can provide a competitive advantage. This work does not aim to discredit valuation models as means of comparing different investment opportunities. Indeed, these models can be useful tools when applied with a proper comprehension of the market process. However, it is the quality of entrepreneurs who bears uncertainty, chooses new projects to generate profit, and guarantees good governance practices.

Also, in a subjective world, composed of complex phenomena, the subjective evaluation of entrepreneurial quality, contrasted with the thymological comprehension investors have of the markets, is the main guideline to organize an investing portfolio. If investors rely solely on quantitative models to calculate fair prices, they may overlook important real-world factors. This can lead to a failure to recognize significant phenomena and a lack of confidence in their own abilities as financial entrepreneurs to perceive opportunities, forecast markets, judges under uncertainty, and organize their portfolios.

5. Concluding remarks

The present work criticizes the Discounted Cash Flow method from an Austrian perspective, based on its comprehension of entrepreneurship, dynamic efficiency, and market process. Also, it presents guidelines for developing a subjective, entrepreneurial-based alternative approach to guide investment decision-making.

Through the development of the work, it became apparent that besides Discounted Cash Flow (DCF) being considered a tool through which investors can compare different investment alternatives, it is purposeless to determine the “fair” price of an asset, as the future cannot be modeled and social facts are complex, involving countless variables.

Investors should replace the positive objective approach of mainstream finance, based on over-rationalism, for a subjectivist approach, attempting to comprehend, through *thymological analysis*, the market process in which they are inserted. Additionally, they should evaluate the quality of the assets they are investing in, with a focus on the role of productive entrepreneurship.

Entrepreneurs are individuals who bear uncertainty. While seeking profits, they shape the future. The quality of entrepreneurial judgments and organization of production is the source of a firm’s growth over time. Entrepreneurship involves more than just maximizing profits, being essential also to challenge turbulence and sustain the firm.

7. Conflict of interest

The author declares it has no conflict of interest.

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