

TOWARD A SUBJECTIVE APPROACH TO INVESTMENT APPRAISAL IN LIGHT OF AUSTRIAN VALUE THEORY

JEFFREY M. HERBENER AND DAVID J. RAPP

ABSTRACT: Ludwig von Mises developed the theory of economic calculation in the context of his argument that the central planning of socialism cannot make economizing decisions concerning the use of resources in a division of labor economy. Focus on the problem of allocating resources in society led to a stress on the calculation used by entrepreneurs in making production decisions. Theory concerning other facets of economic calculation used by entrepreneurs in making investment decisions, i.e., decisions concerning the economizing combination of assets an entrepreneur should own in his enterprise, for instance, was left relatively underdeveloped. The purpose of this paper is to further explore the implications of Mises's theory of economic calculation for asset acquisitions and disposals, especially the acquisition and disposal of entire business enterprises. In particular the paper seeks to demonstrate that the subjective approach to investment appraisal developed in the German-language, business-management literature is compatible with Austrian value theory.

Dr. Jeffrey M. Herbener (jmherbener@gcc.edu) is Chairman of the Department of Economics at Grove City College, Fellow for Economic Theory and Policy at The Center for Vision and Values at Grove City College and a Senior Fellow at the Ludwig von Mises Institute. Dr. David J. Rapp (rapp@iwp.uni-saarland.de) is a Post-Doc Researcher at the Institute of Auditing at Saarland University, Germany, and a regularly recurrent Visiting Professor at Grove City College. The authors wish to thank an anonymous referee and conference participants of the Austrian Economics Research Conference 2015 (AERC 2015) at the Mises Institute in Auburn, Alabama, for constructive and helpful suggestions.

KEYWORDS: value of the firm, appraisal, investment appraisal, value theory, subjectivism, Austrian school, neoclassicism

JEL CLASSIFICATION: B31, B41, B53, G32

I. INTRODUCTION

Carl Menger (1871), the founder of the Austrian school of economics, corrected the theory of price held by the British Classical School which had largely ignored the preferences of consumers.¹ In demonstrating the influence of consumer preferences on prices of goods, however, Menger did not fully integrate the realm of decision-making by entrepreneurs and the realm of decision-making by consumers in a general theory of value, choice, and action. For its part, the neoclassical wing of the Marginalist Revolution extended the profit-maximizing decision-making of entrepreneurs both to the income-maximizing decision-making of producers and to the utility-maximizing decision-making of consumers. Neoclassical economists adopted models of optimizing agents to cover all cases of human action.² Ludwig von Mises (1998), in contrast, worked within Menger's causal-realist framework to develop a general theory of action based on the reality of the human person and the logic of human action. He developed the proper relationship among the different decision-making circumstances in which persons find themselves in a division of labor economy under the general principle of action which he called economizing.³

The general theory of action encompassing any and all circumstances rests on personal valuation. Considering the objective circumstances in which a person finds himself, he envisions alternative courses of action, anticipates the likelihood of the realization of the alternative ends involved, and chooses the alternative he prefers, i.e., the alternative he values more highly than his next

¹ On Menger's contribution to economics, see Salerno (1999).

² On optimization, see, e.g., Samuelson (1947). On extending optimization from market activity to human action in general, see, e.g., Becker (1976).

³ On Mises's development of Menger's framework, see Salerno (1990). On Mises and economic calculation, see Salerno (2008).

most valuable alternative. Whatever his circumstances, a person economizes by making mental judgments of preference choosing more highly valued ends to attain and less valuable means to employ in attaining them. Even though Mises made the crucial distinction between valuation as the decision-making method in an autistic economy and appraisal as part of the decision-making process in a division of labor economy, he was careful not to treat them as dichotomous but instead to recognize that appraisal was a necessary step to an economizing valuation in decision-making in the division of labor.⁴ While appraisal is a crucial step to an economizing valuation in the division of labor, however, it is not always sufficient, particularly in case of investment decisions. These decisions rather require further preparation before the final valuation can be made. Mises (1998, p. 211) subsumed both a forward-looking computation aiming at the determination of planned action as well as backward-looking arithmetic calculations using past data, i.e., accounting, under the term “economic calculation.” He did not, however, extend his analysis to all of the different forms of economic calculation needed to make investment decisions. Concerning forward-looking computations in preparation of investment decisions, the term “investment appraisal” is well established, and will, consequently, be used below.

Mises’s development of the relationship between valuation and appraisal was a crucial step in his justly famous argument demonstrating the impossibility of economizing decision-making by central planners concerning the use of resources in a division of labor economy. Having shown that imputation of value by the central planners to producer goods in the higher-stages of production was impossible, Mises then demonstrated that the backward-looking path of economic calculation, i.e., monetary

⁴ To explain the terms “valuation” and “appraisal,” Mises (1998, p. 329) wrote: “Appraisal must be clearly distinguished from valuation. Appraisal in no way depends upon the subjective value of the man who appraises. He is not intent upon establishing the subjective use-value of the good concerned, but upon anticipating the prices which the market will determine. Valuation is a value judgment expressive of a difference in value. Appraisal is the anticipation of an expected fact. It aims at establishing what prices will be paid on the market for a particular commodity or what amount of money will be required for the purchase of a definite commodity.”

accounting, used by entrepreneurs as a starting point for economizing decision-making was possible only in a market economy. Lacking monetary prices for factors of production determined by the interplay of supply by the owners of these factors and demand by the entrepreneurs who desire to obtain their productive services, central planners cannot efficiently allocate society's resources into the production of goods people desire (Mises 1998, pp. 324–353 and 694–711).

As Guido Hülsmann (2007, pp. 369–404) has argued, Mises's economic-calculation framework for dealing with the issue of decision-making under central planning has a wider application to other analyses of the division of labor. Entrepreneurs are not the only economizing decision-making investors in the market economy. Capitalists also invest in assets, and claims to assets, and thereby aid in economizing the process of capital formation in the market economy. In so doing, an investor *inter alia* requires an understanding of the future monetary benefits that a collection of assets, including an entire business, is able to generate; otherwise, an investor cannot make a proper valuation of the collection of assets he intends to acquire. Investment decisions must be based upon a genuine appraisal of the collection of assets acquired or disposed. It is inadvisable to purchase or sell an entire business or even a share package without an economic appraisal of the business concerned. Just like a valuation of a business's purchase or disposal requires an appraisal of the future income stream the business will presumably generate, it too necessitates an investment appraisal which avails of the appraisal conducted in advance. Investment appraisal aims at the calculation of the marginal price that the valuing subject can barely accept without suffering an economic loss.

The primary aim of this paper is to shed light on investment appraisal used by investors in preparation of a company purchase or disposal. Therefore, Section II of the paper will discuss *why* not only economic appraisal is necessary in preparation of a purchase or sale of an entire business or even parts of a business but also investment appraisal. Section III will point out *how* such an investment appraisal can be operationalized with respect to the implications of subjective value theory and, hence, be combined with Austrian value theory. Section IV will explain why the

neoclassical approach to investment is incompatible with Austrian value theory. Section V will conclude.

II. THE VALUATION OF FIRMS AND THE NEED FOR INVESTMENT APPRAISAL

In an autistic economy, decision-making must rely on valuation without appealing to money prices. Every choice made by Robinson Crusoe, or the central planners of socialism, is guided solely by valuation. Crusoe does not need money prices to make economizing decisions concerning consumption or production. He can anticipate the contribution to his well-being made by a good as a means to attain the ends he values by making a mental judgment. He does not need to make a money-price computation for his mental judgment to be efficacious in economizing his action.

Participants in a market economy, in contrast, cannot make economizing decisions without the aid of current or anticipated future money prices, i.e., without appraisal. In considering the purchase of a particular good, a consumer must employ the prices of other goods he could buy to compute the opportunity cost of the money he foregoes by making his purchase. Having made the computation of the purchasing power of money, he can then use valuation to establish a preference between the good he acquires and the purchasing power of the money he foregoes.

A producer in the market economy also must use money prices to make a computation as a requisite for establishing the value he places on the market-dependent alternative of his choice. He must use money prices to determine the purchasing power of the compensation he will receive from selling the services of his factors of production. Having made this computation, he can compare the value of the purchasing power of his compensation to the opportunity cost he foregoes in selling the services of his factors of production which is the personal use of his factors of production, e.g., the leisure he foregoes when selling the services of his labor.

The valuations made by entrepreneurs and capitalists acting in a division of labor economy also require the assessment of current market prices and the anticipation of future market prices, i.e., appraisal, in preparation of establishing their preferences and

making their choices. Every production decision an entrepreneur makes requires anticipating both the prices of the output he will sell and the prices of the inputs he will buy. Having computed the financial benefit he anticipates from production, he then makes his production decision on the basis of valuing such production and sale more highly than what he considers his next best alternative. To the extent that he considers investments in other lines of production as his best alternative, the entrepreneur also requires anticipating the prices relevant to other investments in production and the terms of available funding in making various investment decisions. If an entrepreneur made a production decision having computed only its monetary benefits, like a producer does in selling his factors of production, or only its monetary costs, like a consumer does in buying a consumer good, his decisions would not be economizing. Neither will an entrepreneur's nor a capitalist's investment decisions be economizing if he judges the value of either the assets acquired or the liabilities potentially incurred without appraising them, i.e., anticipating their monetary consequences over time.

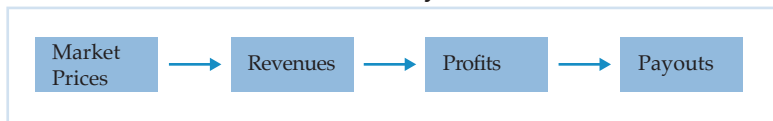
While every valuation in a market economy necessitates the consideration of market prices, most of them, however, do not require any *formalized* computation of a critical or marginal price, i.e., the price a person is individually barely willing to accept. For example, a consumer buying a good can rank the net benefit he anticipates obtaining by purchasing the good against the net benefit of his best alternative action. A person who buys a chocolate bar for \$1.00 need not estimate the maximum price he is willing to pay in order to rank the net benefit of his purchase above the net benefit of its best alternative. The consumer assesses the value of consuming the chocolate bar independently of computing the critical price. Likewise, a producer selling the services of a factor of production he owns need not necessarily formulate a critical price. The net benefit he anticipates by selling can be ranked by him against the net benefit of his best alternative action. The producer can assess the cost of foregoing the use of the services of his factor of production independently of computing the critical price. Entrepreneurs and capitalists in making investment decisions, however, cannot dispense with computing the critical price. This price is essential in comparing the monetary implications of different alternatives.

The money price realized by an asset in the division of labor depends not only on how many different alternative uses it has in the various production processes across the stages of production, but also on the manner in which it is bundled with complementary producer goods under the ownership of an entrepreneurial group in each alternative line of production. A characteristic example of a collection of assets to be so valued is a business enterprise as a whole. Companies are unique conglomerates of tangible and intangible factors (Matschke and Brösel, 2013, p. 4), including particular human persons. In general, a business consists of thousands of gear wheels that need to interlock in order to make the company function properly. Since entire businesses—or even share packages as detachable parts of such businesses—must exhibit a high degree of complexity (Olbrich, Quill, and Rapp, 2015, pp. 18–19), the contribution which any, and especially a big, company in its entirety can make to a person’s well-being is not evident at first glance. Unlike, e.g., a consumer, who is able to assess the contribution to his well-being made by a good he desires independently of a formalized process and, consequently, can rank the good and the asking price properly, investors initially lack the knowledge of the magnitude of the investment’s contribution to their well-being. An investor seeking to acquire a business enterprise cannot realize this business’s contribution in attaining his ends without further considerations, because it is impossible to briefly look at the bundle of producer goods called “business enterprise” and really know whether or not one prefers it to a certain asking price, i.e., to make a proper valuation. A valuation of entire businesses lacking an investment appraisal beforehand must therefore be interpreted to be a more or less random *guess* as it lacks crucial information. Appraisal, in such cases, is not limited to assessing market prices of alternatively available goods but also covers the anticipation of monetary implications of the particular business enterprise concerned. The information acting man gathers from such appraisal serves as an important input parameter for investment appraisal. This path of economic calculation leads to a certain critical price for the investor that he is, at most, willing to pay when buying or at least willing to receive

when selling, from the perspective of improving his well-being.⁵ This critical price is crucial information for an investor, because it is a requisite for him to make an end-oriented ranking of the business concerned and the asking price. As will be illustrated in detail in section III, the assessment of a particular person's critical price must be based upon the future payouts this person expects to receive (in case of a purchase) or to forego (in case of a sale).

According to Mises (1998, p. 329), appraisal implies the anticipation of future market prices. Future market prices of goods sold determine a business's future revenues, profits, and finally payouts to the company's owners (see figure 1).

Figure 1: Fundamental Interrelations between Market Prices, Revenues, Profits, and Payouts



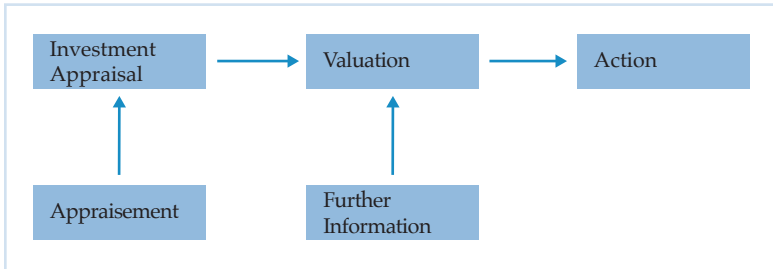
These future payouts are the decisive figure for an investor, because they determine the investor's willingness to accept a certain price in a transaction. An individual investor prepares a decision by considering the future payouts derived from the anticipated future market prices of goods applying investment appraisal.

As figure 2 illustrates, the valuation as well as the action finally taken should be—at least partly—based upon both appraisal and investment appraisal, because the latter—drawing on the information gathered from the former—provides a person with the most crucial financial information regarding the business in question—the critical or marginal price that he subjectively considers barely acceptable.⁶

⁵ For the importance of anticipating future payments for decision-making concerning acceptable prices in the present see, e.g., Davenport (1913, pp. 209–235). See also Fetter (1907, especially pp. 122–123).

⁶ Concerning the relation of appraisal and valuation, Mises (1998, p. 329) wrote: "The valuation of a man buying and selling on the market must not disregard the structure of market prices; they depend upon appraisal. If an individual speaks of the costs incurred by the purchase of some goods already acquired or to be incurred by the purchase of goods he plans to acquire, he expresses these costs in terms of money. But this amount of money represents in his eyes the degree of

Figure 2: Fundamental Interrelations between Appraisalment, Investment Appraisal, Valuation, and Action



Opponents of the necessity of investment appraisal in decision making about investing in a business might argue that such an appraisal can only incorporate financial ends⁷ and, therefore, excludes various non-monetary ends a person may have in an action.⁸ It is true that, in contrast to non-financial ends, financial ends can be readily measured and expressed in terms of money. But including investment appraisal in decisions concerning investments in businesses does not exclude considerations outside such appraisal. An investor is not forced to base his valuation and action solely on the financial perspective. As a matter of course, investors may complement financial information with non-financial considerations in their valuations. Investment appraisal's result should be understood as one piece of information that contributes—in addition to other information—to the valuation process (see figure 2). Moreover, as discussed above, subjective valuing of business enterprises without investment appraisal is arbitrary with respect to improving a person's well-being. Finally, even though investors can pursue non-financial ends with their

satisfaction he could obtain by employing it for the acquisition of other goods. The valuation makes a detour, it goes via the appraisalment of the structure of market prices; but it always aims finally at the comparison of alternative modes for the removal of felt uneasiness."

⁷ For the exclusive consideration of financial ends within the most common investment appraisal approach see, e.g., Busse von Colbe (1957, pp. 18–19), Sieben, and Schildbach (1979, p. 459). For the consideration of non-financial ends in investment appraisal see Brösel (2002, pp. 160–166).

⁸ For exemplary non-financial ends that investors might aim at with a business see Hering (2015, p. 9).

investments, focusing on monetary ends by applying a financial calculation nevertheless is essential to their decision-making because investors primarily aim at financial ends when purchasing or selling an entire business or parts of it (Taylor, 1980, p. 51; Hering, 2015, p. 9) or, at least, they aim to achieve financial ends more fully rather than less fully.

To serve in its role as an indispensable decision-making tool, i.e., one providing crucial information, a genuine investment appraisal must respect the subjectivity of value (e.g., Matschke, Brösel, and Matschke, 2010, pp. 34–35, Olbrich, Quill, and Rapp, 2015, p. 18). Investment appraisal has no merit if it relies on objective facts to the exclusion of a subjective element.⁹ The next step, therefore, is to outline a subjective approach to investment appraisal that reflects the implications of Austrian value theory.

III. A SUBJECTIVE APPROACH TO INVESTMENT APPRAISAL COMPATIBLE WITH AUSTRIAN VALUE THEORY

Investment theory, which allows a genuine real-world approach to investment appraisal from the perspective of the acting person, has been developed by German-speaking authors over more than the last century and a half.¹⁰ Its lineage is traceable generally to the marginal utility concept and specifically to the works of Hermann Heinrich Gossen (1854) as well as early Austrian economists, including the founder of the Austrian school Carl Menger (1871).¹¹

⁹ Mises (1998, p. 346–347) wrote: “Attempts to establish cost accounts on an ‘impartial’ basis are doomed to fail. Calculating costs is a mental tool of action, the purposive design to make the best of the available means for an improvement of future conditions. It is necessarily volitional, not factual.”

¹⁰ E.g., König (1813, pp. 223–224) already mentions the subjectivity of value that needs to be considered in investment appraisal in his essay on the appraisal of forest value. An historic overview about the consideration of subjectivism in the German economic theory even before the Marginalist Revolution can be found in Priddat (1998).

¹¹ On the lineage of investment theory which is traceable to the works of Gossen and Menger, see, e.g., Kreutz (1909, p. 31), Berliner (1913, pp. 12–13, 25), Mirre (1913, pp. 156–158, 160, 165), Liebermann (1923, pp. 9–10), Schmalenbach (1937, p. 27), Brösel, Matschke, and Olbrich (2012, p. 240), Brösel, Toll, and Zimmermann (2012,

In discussing the distinction between valuation and appraisal, Mises recognized the lineage of subjective value in price theory back to, in particular, Gossen and Menger. He (Mises, 1998, p. 331) wrote:

The tasks incumbent upon the theory of the prices of factors of production are to be solved by the same methods which are employed for treatment of the prices of consumers' goods.... This method we owe to Gossen, Carl Menger, and Böhm-Bawerk. Its main merit is that it implies the cognition that we are faced with a phenomenon of price determination inextricably linked with the market process.

Mises was also familiar with the application of subjectivism in the early German business management theory, citing the work of Eugen Schmalenbach who was a major driving force in the development of German business management theory and investment theory in particular. Mises (1933, p. 197 [2003a, p. 221]) wrote:

Whoever wishes to form some idea of the importance of the theory of marginal utility has only to look at any presentation of the theory of the market in one of the current textbooks on the subject and to try separating out all the ideas contained in it that we owe to the modern subjective theory of value. Let him pick up the leading books on business management—for example, the works of Schmalenbach—and he will understand the contribution that subjectivism has made to this subject.

Thus, both Austrian value theory and investment theory spring from the same source. It is unsurprising, therefore, that they are closely related to each other, blood brothers in fact. Investment theory is a business management oriented operationalization of Austrian value theory. The theoretical foundation of genuine investment appraisal, which provides entrepreneurs with crucial information they need for their decision making (Hering, 2015, p. 3), is Austrian value theory (e.g., Schmalenbach, 1937, p. 27, Matschke and Brösel, 2013, p. 6, Hering, 2014, pp. 27–28).

p. 89), Matschke, and Brösel (2013, p. 6), Hering (2014, pp. 27–28), Olbrich (2014, p. 141), and Rapp (2014a, p. 155). Concerning Menger, Mises (2003b, p.1) wrote, "What is known as the Austrian School of Economics started in 1871 when Carl Menger published a slender volume under the title, *Grundsätze der Volkswirtschaftslehre*.... Until the end of the Seventies there was no 'Austrian School.' There was only Carl Menger."

Investment appraisal serves this function because it adheres to three main principles: subjectivity, appraisal as an entity, and future orientation.

First, the principle of *subjectivity* preserves the thoroughly subjective nature of any valuation and hence any genuine investment appraisal.¹² Value must be understood as a *subject-object-object-relation* (Sieben, 1968, p. 285)¹³ that investment appraisal has to consider: Value refers to the benefit which a specific valuing *subject*¹⁴ expects the underlying *object* being valued to gain compared to the benefit he associates with an alternatively available *object* (i.e., the alternative action given up). Investment appraisal must respect the nature of value and choice, otherwise it could not serve as a useful element of decision-making.

Second, the principle of *appraisal as an entity* refers to the idea that an entire company should be appraised, normally, as complementary assets that form an economic organization rather than appraising the company's assets individually and then adding up the total sum.¹⁵ Appraisal as an entity rests on the principle that, generally, the pooling of goods makes a higher contribution to a person's well-being than the sum of the individual parts. In deciding whether to acquire or dispose of an entire entity, it is crucial for a person to distinguish between the benefit that he gains by possessing the entity and the sum of the benefits a person would obtain by owning each asset individually, because usually these benefits do not coincide. The discrepancy is caused by combination effects which can either increase or decrease the entity's benefit

¹² On the subjectivity of investment appraisal, see König (1813, pp. 223–224), Kreutz (1909, p. 34), Schmalenbach (1917/1918, p. 4), Liebermann (1923, pp. 3, 6, 30, 59–61, 75), Busse von Colbe (1957, pp. 143–144), and Moxter (1983, pp. 23–24).

¹³ Guido Hülsmann shows in his introduction to Mises's book, *Epistemological Problems of Economics*, that Ludwig von Mises recognized the same point. See Mises (2003a, p. xxxvi).

¹⁴ The valuing *subject* accords with the person for whom the investment appraisal is conducted. The valuing subject's perspective is therefore the decisive one. In contrast, the valuation *object* is the good that needs to be appraised in preparation of the valuing subject's valuation. In this paper we focus on entire companies or share packages as valuation objects.

¹⁵ On appraisal as an entity, see Schmalenbach (1911/1912, pp. 484–485), Schmalenbach (1912/1913), Mirre (1913, pp. 167–169), Schmalenbach (1917/1918, pp. 6–7), and Schmalenbach (1966, pp. 60–61).

compared to the sum of the benefits of the individual goods (e.g., Küting, 1981).¹⁶

Third, the principle of *future orientation* postulates that the only benefits which can contribute to a person's well-being are future benefits.¹⁷ For investment appraisal purposes, therefore, it does not matter what net income the underlying object being appraised has yielded in the past.¹⁸ The only thing that really matters is the benefit that the company in question is (subjectively) expected to gain in the future. Past observations, however, may be used as a starting point of forecasting (e.g., Hering, 2014, p. 31), since ignoring historical facts aggravates the problem of uncertainty (Mises, 1998, pp. 333–335). Mises (1998, p. 333) wrote:

In drafting their plans, the entrepreneurs look first at the prices of the immediate past.... Of course, the entrepreneurs never make these prices enter into their calculations without paying regard to anticipated changes. The prices of the immediate past are for them only the starting point of deliberations leading to forecasts of future prices.

Aside from complex general models,¹⁹ a properly applied income approach is the only suitable method for an investment appraisal concerning the purchase or sale of an entire business.²⁰ In contrast to its alternatives, i.e., the cost approach and the market

¹⁶ Peter Klein (2010, pp. 109–114) argues that the very act of organizing a business is a subjective judgment of a particular entrepreneur or entrepreneurial group who must assess the value of different configurations of both assets and persons that could be organized within his business.

¹⁷ On future orientation, see von Oeynhausen (1822, p. 306), Kreutz (1909, p. 34), Liebermann (1923, p. 69), Münstermann (1966, pp. 20–21), Schmalenbach (1966, pp. 36–37), and Hülsman (2000, p. 4).

¹⁸ Münstermann (1966, p. 21) depicts the principle of future orientation with his phrase “for what has been, the businessman does not pay.” Mises (1998, p. 329) wrote: “Appraisal is the anticipation of an expected fact. It aims at establishing what prices will be paid on the market for a particular commodity or what amount of money will be required for the purchase of a definite commodity.”

¹⁹ For an approach to investment appraisal based upon a complex general model see, e.g., Matschke, Brösel, and Matschke (2010, pp. 12–22).

²⁰ For the uselessness of the application of other approaches within investment appraisal in preparation of a purchase or sale of a business see, e.g., Olbrich, and Rapp (2012, p. 235).

approach,²¹ the income approach is able to incorporate both the subjective future benefits of an opportunity under consideration and the alternative opportunities relevant to the person making the valuation. Because of this, the income approach can be used for investment appraisal, i.e., to calculate the requisite personal critical price. The income approach is based upon the well-known present-value technique. Thus, this approach appraises a certain business by discounting its future benefits. It can be expressed in the commonly-used formula, in which FB_t reflects the future benefit in period t and r embodies the interest rate applied for discounting purposes:

$$\text{Appraised firm value} = \sum_{t=1}^T \frac{FB_t}{(1+r)^t}$$

Whether or not the income approach conforms to Austrian value theory, however, depends upon the input parameters' specific characteristics. Not every variant of the income approach allows a subjective investment appraisal. For example, the current mainstream in investment appraisal, which is unacceptable from the view of Austrian value theory, also relies upon an application of the income approach. For the investment appraisal to be suitable and in line with Austrian value theory, however, the income approach's actual input parameters must comply with the three main investment appraisal principles mentioned above.²²

First, the principle of *subjectivity* impacts both the numerator (future benefits) as well as the denominator (discount rate) of the income approach. Future benefits must be forecasted from the perspective of the person who is valuing and choosing. Predictions of future benefits depend upon personal factors, such as the dividend policy, individual tax rates including potential tax loss carry-forwards, and individual synergies, e.g., if the person who is valuing already owns a competing object to the one being valued

²¹ For the market approach (which might also be called "relative valuation") e.g. see Damodaran (2012, pp. 19–23). For the unmasking of the market approach with regard to investment appraisal see Olbrich (2000). For a comprehensive overview on the cost approach see Matschke, and Brösel (2013, pp. 315–325).

²² Olbrich, Quill, and Rapp (2015, pp. 17–20) illustrate the (historic) relation between the above presented investment appraisal principles and Austrian value theory.

(Matschke, and Brösel, 2013, p. 18, Hering, 2014, p. 28).²³ Moreover, the principle of subjectivity is closely connected to the principle of future orientation. Because there is no objective and universally valid forecast, the anticipation of future developments must necessarily be based upon subjective estimates and the person's appetite for risk (Hering, 2014, p. 30). It is crucial to state that the appraiser's subjective expectations are not necessarily definitive in forming both a genuine appraisal, and, consequently, investment appraisal. If the appraiser is not the same person as the one who is valuing and choosing, e.g., because the appraisal is conducted by an audit firm, then the appraiser must consider his client's perspective instead of his own (Matschke, and Brösel, 2013, p. 3).

Besides future benefits, the principle of subjectivity also affects the interest rate applied for discounting purposes. The relevant interest rate serves to make comparisons (e.g., Sieben, and Schildbach, 1979, p. 460). The business concerned must be compared to the best alternative action that is available (e.g., Hering, 2014, pp. 28–29, Hering, 2015, p. 144). Instead of purchasing a business, one person may undertake a different investment opportunity, whereas another person might use his money to pay back an expensive loan. Clearly, the best alternative application, i.e., the optimal *marginal use* of funds, depends upon both the specific person's investment and funding opportunities and financial ends and these will differ from one person to another. In order to reach an economically relevant result by assessing the contribution that the business's benefits can make to a person's well-being, investment appraisal must necessarily consider the underlying person's optimal marginal use of money within the income approach instead of applying an "objective" market interest rate (e.g., Hering, 2014, pp. 28–29). Because the interest rate that the last invested or funded dollar yields in the person's overall investment and financing program represents the best known alternative, it should serve as the discount rate. This rate has been called the *endogenous marginal interest rate* (e.g., Hering, Toll, and Kirilova, 2014, p. 44). It reflects the internal rate of return of the last invested or funded dollar, i.e.,

²³ The subjective estimation of future benefits should also consider the time aspect with regard to artificial boom and bust cycles and, therefore, the findings of Austrian business cycle theory. For the fundamentals of Austrian business cycle theory, see Rothbard (2009).

the internal rate of return of the so-called *marginal object* (Hering, 2015, p. 144). The marginal object may be the least profitable investment opportunity or the most expensive funding alternative that is ranked and chosen by the person making the valuation as suitable to achieving one of his financial ends.

Second, the principle of *appraisal as an entity* points out that the contribution made by a business as a whole to a person's well-being usually exceeds the contribution that the sum of the business's assets, appraised individually, can make. This principle affects the measurement of future benefits and, therefore, the numerator of the income approach which is derived from appraisement. In order to serve as a genuine investment appraisal tool, the application of the income approach, normally, must include future benefits that the business is able to generate as an entity. In addition, the numerator also must consider individual synergies that might occur along with the benefits of the object being valued, if the business comes into the person's possession. A presumptive seller also needs to take possible personal synergies into account that he foregoes by selling his business.

Third, the principle of *future orientation* requires the exclusive consideration of future benefits (and discount rates) in investment appraisal. The net income that a certain business gained in the past cannot contribute to the well-being of its future owner (e.g., Rapp, 2014a, p. 162). Only future income can increase that person's wealth. A simple extrapolation of past developments, therefore, can neither be an appropriate approach to appraisement nor, consequently, to investment appraisal.²⁴ At any moment, the future might reveal first-time developments, which cannot be part of the past's extrapolation. Therefore, it is a fallacy to believe that longer periods under observation of past events automatically lead to better forecasts of the future (Rapp, 2013, p. 361). Moreover, forecasting the consequences of human action requires a person's judgment. The array of prices of goods, patterns of production, and other data generated by human action are the result of human choices and human choices are not determined by empirical influences alone. As Mises (1998, p. 105) put it:

²⁴ On the inadequacy of extrapolation, see Schmalenbach (1966, pp. 37–38), Moxter (1983, pp. 97–99), Frey (2011, p. 70), Olbrich, and Rapp (2012, p. 2006).

Natural science does not render the future predictable. It makes it possible to foretell the results to be obtained by definite actions. But it leaves unpredictable two spheres: that of insufficiently known natural phenomena and that of human acts of choice. Our ignorance with regards to these two spheres taints all human action with uncertainty. Apodictic certainty is only within the orbit of the deductive system of aprioristic theory. The most that can be attained with regard to reality is probability.²⁵

The problem of uncertainty, then, can never be completely solved.²⁶

In the face of uncertainty in making their investment appraisals, investors (have to) rely on heuristics. A Monte Carlo simulation is one suitable example (Hertz, 1964, pp. 95–97, Coenenberg, 1970, pp. 793–795). It allows a person making a decision, in the absence of statistically given objective probabilities, to transparently structure possible future developments based on individual forecasts and to subjectively decide which scenario he expects to occur. Such a simulation has three steps (Hering, 2015, pp. 334–339). First, the person making the valuation estimates the distributions of the underlying input parameters, which are future benefits and interest rates. The estimate need not be restricted to particular distributions. The person making the final valuation might, e.g., apply the simulation using different distributions, since he lacks the knowledge of the actual one. Second, a computer-based simulation process is generated, which randomly combines future benefits and interest rates depending on the estimated distributions. After the simulation has generated thousands of combinations, the distribution of the target value can be transparently illustrated using a frequency distribution and/or a risk profile. Third, with this transparent illustration of the investment project's chances and risks in hand, the person making the valuation is able to select a single appraised firm value out of the distribution based upon

²⁵ About forecasting in the face of uncertainty, Mises (1998, p. 107) wrote: "There are two entirely different instances of probability: we may call them class probability and case probability. The field for the application of the former is the field of the natural sciences, entirely ruled by causality; the field for the application of the latter is the field of the sciences of human action, entirely ruled by teleology."

²⁶ As Sieben, and Diedrich (1990, p. 807) note: "Uncertainty cannot be outwitted." Or, as Mises (1998, p. 106) put it, "Every action refers to an unknown future. It is in this sense always a risky speculation."

his personal future expectations as well as his appetite for risk as a typical entrepreneurial act.

In summary, the widely-applied income approach can be used to render a subjective investment appraisal, which is compatible with Austrian value theory. In order to apply that approach usefully, the anticipated future benefits must reflect the actual payment flows that the person anticipates gaining as he considers the business as an entity, including individual tax rates and synergy effects. The interest rate that is applied to discount the future payment flows also needs to be assessed personally. It is reflected in the internal rate of return of the marginal object of the person making the valuation. The problem of uncertainty, however, cannot be definitively solved. One way investors can handle this problem is a Monte Carlo simulation, which generates a transparent decision basis. The final selection of the appraised firm value out of the derived distribution of potential firm values is a typical entrepreneurial act that is up to the person making the valuation.

The subjective approach to investment appraisal presented in this paper can be smoothly combined with Austrian value theory. Subjective investment appraisal accepts and is built upon the subjectivity of value and therefore, can provide entrepreneurs with the most crucial information they need to make their valuations leading to the purchase or sale of a company—the marginal price they can at most pay to purchase or they can at least accept to sell without suffering an economic loss. This information is crucial for the subjective valuation process which determines the entrepreneur's final action.

IV. FUNDAMENTALS OF THE NEOCLASSICAL FINANCE-THEORY- BASED MAINSTREAM AND ITS INCOMPATIBILITY WITH AUSTRIAN VALUE THEORY

The current mainstream²⁷ in investment appraisal relies on input parameters within the income approach that are much different

²⁷ For potential reasons why neoclassical finance theory is applied almost axiomatically in both academia and practice see Olbrich, Quill, and Rapp (2015, pp. 7–8).

from what *investment* theory requires. It is based upon neoclassical *finance* theory and neglects the crucial personal perspective in favor of a questionable “objective” market perspective (Matschke, and Brösel, 2013, pp. 26–27). Though the prevalent mainstream discounted cash flow (DCF) methods are also based upon the income approach, they are inadequate as a decision tool (e.g., Rapp, 2014b, p. 1067). The main reason for this diagnosis is the application of finance-theory based models within current DCF methods (Hering, 2014, p. 263).

In these methods, the discount rate is usually, at least partly, assessed using the capital asset pricing model (CAPM) (Koller, Goedhart, and Wessels, 2010, p. 234). Instead of considering the essential personal endogenous marginal interest rate, the CAPM aims at the determination and application of an “objective” discount rate (Hering, 2015, p. 307). In order to measure an, at least hypothetically, objective discount rate, the CAPM must rely upon several restrictive assumptions (e.g., Perridon, Steiner, and Rathgeber, 2012, p. 546, Hering, 2015, p. 297).²⁸ These include a perfect capital market (which includes the existence of a single market interest rate for both investments and lending; unlimited access to lending independent of debt ratio, credit-worthiness, credit amount and time pattern; symmetric distribution of information; and the absence of taxes as well as transaction costs) and economic agents with both homogeneous expectations and a standardized risk appetite (μ - σ -principle). Basically, CAPM’s assumptions supplant heterogeneous human persons with an army of homogeneous robots. Because the subjective values of homogeneous robots coincide, the model can generate a (hypothetical) single objective market value (Matschke, and Brösel, 2013, p. 27). The uniformity of economic agents in the CAPM leads finally to

²⁸ Brealey, Myers, and Allen (2014, p. 204)—as the authors of one of the world-wide leading textbooks in mainstream neoclassical corporate finance—admit: “The capital asset pricing model rests on several assumptions that we did not fully spell out.” After this avowal, they only exemplify some of CAPM’s assumptions. Regardless of that fact, they finally claim: “It turns out that many of these assumptions are not crucial, and with a little pushing and pulling it is possible to modify the capital asset pricing model to handle them.” In contrast to that, Hering (2015, p. 306) illustrates that even the assumption of homogeneous expectations alone is drastic, because it excludes the real fundamental problems of investment and funding decisions by definition.

the *market portfolio* which includes *every* risky asset and which is held by *every* single investor. In other words, in the CAPM world, everybody owns everything (Hering, 2015, pp. 298–299). The sole ownership of any company is, by definition, impossible. Thus, the purchase or sale of an entire company is excluded as well. Nevertheless, the CAPM is applied for the investment appraisal of *entire* businesses in preparation of merger and acquisition decisions all over the world every single day. In addition to this logical flaw, the market portfolio view makes the CAPM a quasi-communist model (Hares, 2011, p. 124, Rapp, 2013, p. 361, Hering, 2015, p. 305, footnote 2). Because everybody is invested in the unified market portfolio, every asset is owned by the collectivity of investors. Even though the CAPM grants private property rights (which makes it different from an actual communist case), the market portfolio concept is, at least, evocative of a communist society.

As a matter of course, its assumptions make the CAPM an escapist model (e.g., Hering, 2015, p. 304). The assumed unlimited access to lending, e.g., implies the impossibility of bankruptcies (Rapp, 2014a, pp. 167–168). If you can borrow as much money as you want at any given time, there will not be an issue of illiquidity (Hering, 2014, p. 336). In addition, the assumption of homogeneous expectations implies the expendability of stock markets (Hering, 2015, p. 304). If both seller and buyer held the same expectation, why would the buyer buy when they both expected a negative stock price performance, or why would the seller sell when they both expected a positive stock price performance? But bankruptcies (e.g., Lehman, Enron) and frequent trading on stock markets are part of the real world. By failing to incorporate crucial features of the real world, the CAPM cripples itself as an adequate decision tool in practice. A model that ignores core elements of the real world will make predictions inferior to an approach that incorporates them. In fact, finance-theory-based investment appraisals cannot even provide entrepreneurs with their personal marginal prices, which are the critical elements in their valuing and choosing. Instead such a formulaic appraisal generates a number (“market value”), which is purely hypothetical and more or less unrelated to real world investment decisions.

In claiming the existence of an objective market value, the current mainstream contravenes Austrian value theory. It cannot

serve, therefore, as a reasonable basis for subjective valuations and corresponding actions. The finance-theory-based mainstream must be rejected both on theoretical and practical grounds with regard to investment decisions.

V. CONCLUSION

The valuation of entire businesses or even parts of them made by persons in their purchase or sale follows the same economic laws, outlined in Austrian value theory, as the valuation of any other good. The crucial question that needs to be answered by a person is whether he prefers the ownership of the business over a certain amount of money, i.e., the negotiated price, or vice versa. However, the valuation of an entire company necessitates a consideration beyond valuation for a simple good. A person can only establish a relevant preference for a business, if he is aware of specific financial information. A relevant valuation of a presumptive purchase or sale of a business is impossible as long as the subject making the valuation does not know how the business in question can contribute to his personal well-being. This essential information cannot be gathered just looking at the good called a "business enterprise." Instead, the person needs to conduct a genuine investment appraisal. The purpose of such an appraisal is to let the subject making the valuation know what price he can barely accept without suffering an economic loss in conducting the transaction in question.

A relevant approach to investment appraisal can be found in the mature German investment theory. This theory shares with Austrian economics its approach to the marginal utility concept and the theory of subjective value. According to investment theory, investment appraisal must consider three main principles: subjectivity, appraisal as an entity, and future orientation. Because subjective investment appraisal respects the fundamental relations of Austrian value theory, it can be smoothly combined with Austrian value theory as a useful information tool, which in turn should be conducted by an investor in preparation for a purchase or sale of, e.g., an entire company.

In contrast to *investment* theory, the current mainstream in investment appraisal is based upon neoclassical *finance* theory. It

supplants a personal perspective of valuing in favor of a pseudo-objective market view. Mainstream appraisal's main aim is the assessment of an objective market value for goods, which can only be deduced within a hypothetical world based upon various restrictive and unrealistic assumptions. Being incompatible with Austrian value theory, the current mainstream in investment appraisal cannot support entrepreneurs in making their real-world decisions.

REFERENCES

- Becker, Gary. 1976. *The Economic Approach to Human Behavior*. Chicago: University of Chicago Press.
- Berliner, Manfred. 1913. *Vergütung für den Wert des Geschäfts bei dessen Uebergang in andere Hände*. Hannover/Leipzig: Hahn.
- Brealey, Richard A., Stewart C. Myers, and Franklin Allen. 2014. *Principles of Corporate Finance*, 11th global ed. Groveport, Ohio: McGraw-Hill.
- Brösel, Gerrit. 2002. *Medienrechtsbewertung*. Wiesbaden: Gabler.
- Brösel, Gerrit, Manfred J. Matschke, and Michael Olbrich. 2012. "Valuation of entrepreneurial businesses," *International Journal of Entrepreneurial Venturing* 4: 239–256.
- Brösel, Gerrit, Martin Toll, and Mario Zimmermann. 2012. "Lessons Learned from the Financial Crisis—Unveiling Alternative Approaches within Valuation and Accounting Theory," *Financial Reporting* 4: 87–107.
- Busse von Colbe, Walther. 1957. *Der Zukunftserfolg*. Wiesbaden: Gabler.
- Coenenberg, Adolf G. 1970. "Unternehmensbewertung mit Hilfe der Monte-Carlo-Simulation," *Zeitschrift für Betriebswirtschaft* 40: 793–804.
- Damodaran, Aswath. 2012. *Investment Valuation*. 3rd ed. Hoboken, N.J.: Wiley.
- Davenport, Herbert J. 1913. *The Economics of Enterprise*. New York: The Macmillan Company.
- Fetter, Frank A. 1907. *The Principles of Economics*. New York: The Century Co.
- Frey, Niko. 2011. *Betriebswirtschaftliche Kunstbewertung*. Wiesbaden: Gabler.

- Gossen, Hermann H. 1854. *Entwicklung der Gesetze des menschlichen Verkehrs, und der daraus fließenden Regeln für menschliches Handeln*. Braunschweig: Friedrich Vieweg und Sohn.
- Hares, Christoph. 2011. *Zur Immobilie aus Sicht der Rechnungslegung und Bewertungstheorie*. Wiesbaden: Gabler.
- Hering, Thomas. 2014. *Unternehmensbewertung*, 3rd ed. Munich: Oldenbourg.
- . 2015. *Investitionstheorie*, 4th ed. Berlin/Boston: De Gruyter.
- Hering, Thomas, Christian Toll, and Polina K. Kirilova. 2014. "How to Compute a Decision-oriented Business Value for a Company Sale," *Journal of Accounting, Finance and Economics* 4, no. 1: 43–52.
- Hertz, David B. 1964. "Risk Analysis in Capital Investment," *Harvard Business Review* 42: 95–106.
- Hülsmann, Jörg G. 2000. "A Realist Approach to Equilibrium Analysis," *Quarterly Journal of Austrian Economics* 3, no. 4: 3–51.
- . 2007. *Mises: The Last Knight of Liberalism*. Auburn, Ala.: Mises Institute.
- Klein, Peter G. 2010. *The Capitalist & the Entrepreneur*. Auburn, Ala.: Mises Institute.
- Koller, Tim, Marc Goedhart, and David Wessels. 2010. *Valuation*, 5th ed., Hoboken, N.J.: Wiley.
- König, Gottlob. 1813. *Anleitung zur Holztaxation*, Gotha: Becker.
- Kreutz, Wilhelm. 1909. *Wertschätzung von Bergwerken*. Cologne: Self-published.
- Küting, Karlheinz. 1981. "Zur Bedeutung und Analyse von Verbundefekten im Rahmen der Unternehmensbewertung," *Betriebswirtschaftliche Forschung und Praxis* 33: 175–189.
- Liebermann, Benedykt. 1923. *Der Ertragswert der Unternehmung*. Dissertation: University of Frankfurt a.M.
- Matschke, Manfred J., Gerrit Brösel, and Xenia Matschke. 2010. "Fundamentals of Functional Business Valuation," *Journal of Business Valuation and Economic Loss Analysis* 5, no. 1: Article 7.
- Matschke, Manfred J., and Gerrit Brösel. 2013. *Unternehmensbewertung*, 4th ed. Wiesbaden: Springer Gabler.

- Menger, Carl. 1871. *Grundsätze der Volkswirtschaftslehre*. Vienna: Wilhelm Braumüller.
- Mirre, Ludwig. 1913. "Gemeiner Wert und Ertragswert," *Zeitschrift des Deutschen Notarvereins* 13: 155–176.
- Mises, Ludwig von. 1933. *Grundprobleme der Nationalökonomie*. Jena: Gustav Fischer.
- . 1998. *Human Action*, scholar's edition. Auburn, Ala.: Mises Institute.
- . 2003a. *Epistemological Problems of Economics*, 3rd ed. Auburn, Ala.: Mises Institute.
- . 2003b. *The Historical Setting of the Austrian School of Economics*. Auburn, Ala.: Mises Institute.
- . 2008. *Profit and Loss*. Auburn, Ala.: Mises Institute.
- Moxter, Adolf. 1983. *Grundsätze ordnungsmäßiger Unternehmensbewertung*, 2nd ed. Wiesbaden: Gabler.
- Münstermann, Hans. 1966. *Wert und Bewertung der Unternehmung*. Wiesbaden: Gabler.
- Oeynhaus, Carl von. 1822. "Über die Bestimmung des Kapitalwerthes von Steinkohlen-Zechen, Mit besonderer Berücksichtigung des Märkschen Kohlenbergbaues," *Archiv für Bergbau und Hüttenwesen* 5: 306–319.
- Olbrich, Michael. 2000. "Zur Bedeutung des Börsenkurses für die Bewertung von Unternehmungen und Unternehmungsanteilen," *Betriebswirtschaftliche Forschung und Praxis* 52: 454–465.
- . 2014. *Unternehmungsnachfolge durch Unternehmensverkauf*, 2nd ed. Wiesbaden: Springer Gabler.
- Olbrich, Michael, Tobias Quill, and David J. Rapp. 2015. "Business Valuation Inspired by the Austrian School," *Journal of Business Valuation and Economic Loss Analysis* 10, no. 1: 1–43.
- Olbrich, Michael, and David J. Rapp. 2012. "Zur Berücksichtigung des Börsenkurses bei der Unternehmensbewertung zum Zweck der Abfindungsbemessung," *Deutsches Steuerrecht* 49: 2005–2007.

- Olbrich, Michael, and David J. Rapp. 2012. "Wider die Anwendung der DVFA-Empfehlungen in der gerichtlichen Abfindungspraxis," *Corporate Finance biz* 3: 233–236.
- Perridon, Louis, Manfred Steiner, and Andreas W. Rathgeber. 2012. *Finanzwirtschaft der Unternehmung*, 16th ed. Munich: Vahlen.
- Priddat, Birger P. 1998. "Theory of Subjective Value in German National Economics," *International Journal of Social Economics* 25: 1509–1519.
- Rapp, David J. 2013. "Eigenkapitalkosten in der (Sinn-)Krise," *Der Betrieb* 66: 359–362.
- . 2014a. *Zur Sanierungs- und Reorganisationsentscheidung von Kreditinstituten*. Wiesbaden: Springer Gabler.
- . 2014b. "Zur Bedeutung zweckgerechter Unternehmensbewertung im Vorfeld einer Unternehmenstransaktion für die Erfüllung der aktienrechtlichen Sorgfaltspflicht," *Deutsches Steuerrecht* 52: 1066–1068.
- Rothbard, Murray N. 2009. *Economic Depressions: Their Cause and Cure*. Auburn, Ala.: Mises Institute.
- Salerno, Joseph. 1990. "Ludwig von Mises as Social Rationalist," *Review of Austrian Economics* 4: 26–54.
- . 1999. "Carl Menger: The Founding of the Austrian School," in Randall Holcombe, ed., *The Great Austrian Economists*. Auburn, Ala.: Mises Institute.
- . 2008. "Postscript: Why a Socialist Economy is Impossible," in Ludwig von Mises, *Economic Calculation in the Socialist Commonwealth*. Auburn, Ala.: Mises Institute.
- Samuelson, Paul. 1947. *Foundations of Economic Analysis*. Cambridge, Mass.: Harvard University Press.
- Schmalenbach, Eugen. 1911/1912. "Die Gründung der Aktiengesellschaft," *Zeitschrift für handelswissenschaftliche Forschung* 6: 473–511.
- . 1912/1913. "Vergütung für den Wert des Geschäftes bei dessen Übergang in andere Hände," *Zeitschrift für handelswissenschaftliche Forschung* 7: 36–37.

- . 1917/1918. "Die Werte von Anlagen und Unternehmungen in der Schätzungstechnik," *Zeitschrift für handelswissenschaftliche Forschung* 12: 1–20.
- . 1937. *Finanzierungen*, 6th ed. Leipzig: Gloeckner.
- . 1966. *Die Beteiligungsfinanzierung*. Cologne/Opladen: Westdeutscher Verlag.
- Sieben, Günter. 1968. *Bewertung von Erfolgseinheiten*. Unpublished habilitation treatise: University of Cologne.
- Sieben, Günter, and Ralf Diedrich. 1990. "Aspekte der Wertfindung bei strategisch motivierten Unternehmensakquisitionen," *Schmalenbachs Zeitschrift für betriebswirtschaftliche Forschung* 42: 794–809.
- Sieben, Günter, and Thomas Schildbach. 1979. "Zum Stand der Entwicklung der Lehre von der Bewertung ganzer Unternehmungen," *Deutsches Steuerrecht* 17: 455–461.
- Taylor, Thomas C. 1980. *An Introduction to Austrian Economics*. Washington, D.C.: Cato Institute.