

# Time Preference and Entrepreneurship: Ludwig von Mises

## on the Components of Market Interest

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### Abstract

This paper shows how Ludwig von Mises distinguished the components of the market rate of interest and why such a distinction is important. His image of the evenly rotating economy (ERE) played an indispensable role. On the one hand, it enabled him to isolate entrepreneurship by means of a contrast with the robots of the ERE. On the other hand, it enabled him to identify a semblance of praxeological time preference by constructing an image of the ERE interest rate, which he called “originary interest.”

The ERE and originary interest were essential elements in his procedure of bridging the gap between praxeological time preference and the loan interest rates in the market economy. Ultimately, he was able to distinguish three components of market interest rates: the social time preference component (originary interest), the entrepreneurial component, and the price premium (or inflationary-deflationary) component.

These components were integral parts of Mises’s revised presentation of the trade cycle theory in *Human Action*. In other words, without an understanding of the method Mises used to derive the components – i.e., without an understanding of the role of the ERE in Mises’s method – one is unprepared to comprehend the latest version of the Austrian trade cycle theory. The paper demonstrates this with citations from *Human Action*. It also discusses a recent critique of Mises’s effort by Peter Lewin.

One of the most difficult problems in economics is that of separating out the different influences on the market rates of interest. The main purpose of this paper is to describe Ludwig von Mises's solution to this problem. The solution has not to my knowledge been fully understood largely because two of his fundamental concepts have also not been widely understood. These are "originary interest" and "evenly rotating economy." The goal of this paper is to present his solution and, in the process, elucidate these concepts.

Mises deduced that the market rates of interest (what he called "the gross market rate of interest") had three components: (1) a time preference component, (2) an entrepreneurial component, and (3) a price premium component (Mises 1966: 538-46). The deduction was a step-by-step exercise in praxeological and economic thought based on assumptions about human action and a definition of the conditions of the market economy. One can characterize this exercise as containing four steps. The first is to show that time preference is a fundamental assumption that all students of human action must make about individuals (*ibid.*: 99-104; 483-8). The second concerns the methods that must be used to describe interaction, given the great complexity of the market economy. He showed how to use the evenly rotating economy (ERE) (a) to represent market interdependence, (b) to isolate entrepreneurship as the praxeological force behind all economic interaction, and (c) to identify profit and loss as the motivator of entrepreneurship.<sup>1</sup>

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<sup>1</sup>He pointed out that the ERE is indispensable in dealing with the problems of profit and loss (*ibid.*: 248). Then he defined entrepreneurship as "acting man exclusively seen from the aspect of uncertainty inherent in every action" (*ibid.*: 253). At various points in *Human Action*, he used the ERE as a counterfactual when discussing entrepreneurship.

Third, on the basis of the first two steps, he showed how to divide market interest into two components: a “pure” interest component due to *social time-preference* (Mises used the term “originary interest”) and an entrepreneurial profit component (*ibid.*: 530-1; 534-6). Fourth, he showed the effects of the demand and supply of cash balances on prices, including the market interest rates (*ibid.*: 398-432). By taking account of expectations as partial determinants of the demand and supply for cash balances, he was able to identify the price premium component.

It is relatively easy to separate out the price premium component. Starting perhaps with Irving Fisher, many writers have recognized that expectations about future prices have an influence on the market rates of interest. We shall not be concerned here with Mises’s treatment of this issue. Our main focus will be on the time preference and entrepreneurial components.<sup>2</sup>

Mises’s main application of the theory of market interest was his treatment of the trade cycle. *Human Action* provided methodological foundations that his original work on the subject (Mises 1935) lacked.

It appears that no one except Murray Rothbard has followed Mises’s usage of the terms “ERE” and “originary interest” (Rothbard 1962: 297-9; 306-8). Other neo-Austrian economists have either been silent on the role of the ERE or they have criticized it.<sup>3</sup> Indeed, one recent neo-Austrian critic of the ERE, Peter Lewin (1997), suggests that rather than help us understand the

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<sup>2</sup>Thus we follow Mises’s own procedure of first describing interest in the changing economy. Only later did he introduce variations in the price premium. See Mises, *ibid.*: 534.

<sup>3</sup>See Cowen and Fink (1986) and Boettke, Horwitz, and Prychitko (1994). Joseph Salerno refers to Mises’s “final state of rest” analysis (Salerno 1993: 122). But that analysis, as Salerno describes it, is only indirectly related to how the ERE is used in the discussion here.

different influences on interest rates, it confuses matters. He feels that economists should not try to separate the time preference influence from uncertainty, since these are found together in reality (*ibid.*: 155-6). The appendix assesses Lewin's argument.

Parts one and two of the paper are designed to show how Mises used the concepts of time preference and the ERE. Part three shows how interest in the pure market economy contains both a time preference component and an entrepreneurial component. Part four summarizes Mises's use of the ERE to elucidate market interest. Part five addresses the historically important question of why the market economy contains interest. Part six shows how this framework helped Mises present the Austrian monetary theory of the trade cycle. This helps confirm the interpretation provided in this paper of Mises's concepts of time preference, ordinary interest, and the entrepreneurial component of market interest. The Part seven contains a brief conclusion.

## **1. PRAXEOLOGICAL TIME PREFERENCE AND ORDINARY INTEREST**

Mises has been characterized as subscribing to a theory of *positive* time preference. So far as I am aware, Mises did not ever characterize time preference in terms of a sign. He merely assumed that a fundamental characteristic of action is that individuals evaluate alternatives in terms of the time at which they expect to receive the satisfaction due to their choice. In other

words, individuals make choices according to the category of *sooner or later*.<sup>4</sup> To avoid any confusion, I use the term *praxeological time preference* to refer to the notion that individuals evaluate alternatives in terms of the time at which they expect the effects to be felt.<sup>5</sup>

Mises asserted that we cannot conceive of action without also conceiving of time preference. He sought to prove this by contrasting the idea with its opposite – the notion that an actor is *indifferent* as between the times at which he would consume a good:

Time preference is a categorical requisite of human action. The very act of gratifying a desire implies that gratification at the present instant is preferred to that at a later instant...If [a person] were not to prefer satisfaction in the nearer period of the future to that in a remoter period, he would never consume and so satisfy wants. He would always accumulate, he would never consume and enjoy. He would not consume today, but he would not consume tomorrow either, as the morrow would confront him with the same alternative (*ibid.*: 484).

Thus, he reasoned that if a person is indifferent, he would never consume. Since economics assumes that actors make choices in order to consume, indifference as to when the consumption would take place is impossible.

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<sup>4</sup>The choices of acting man "regarding the removal of future uneasiness are directed by the categories of *sooner* and *later*" (Mises 1966: 483). And "[t]ime preference is a categorical requisite of human action" (*ibid.*: 484).

<sup>5</sup>Bettina Bien Greaves entitles a section of her translation of Mises's assessment of Bohm-Bawerk's theory of interest "All Consumers Prefer Present Goods" (Greaves 1974: 156). Murray Rothbard (1962: 385-6) wrote that the interest rate is positive because individual time preferences "are all positive." Laurence Moss (1978: 157) writes of Mises's view that individuals have a "preference for earlier rather than later enjoyments." Roger Garrison (1985: 169) writes of Mises's theory that market participants "have a systematic preference for 'sooner' rather than 'later.'" Israel Kirzner (1993: 171-2) writes that Mises "solves the interest problem by appeal to the widespread (possibly universal) positive time preference." And Lewin (1997: 149) writes that "Although Mises does not provide any complete proof of the categorical necessity of positive time preference in *Human Action*, he does periodically refer to it." For a deeper analysis of the distinction between positive time preference and praxeological time preference, see Gunning 2004 (manuscript).

Mises demonstrated praxeological time preference in two ways. In the first, he adopted the role of the consumer-saver. As pointed out above: "He who consumes a nonperishable good instead of postponing consumption for an indefinite later moment thereby reveals a higher valuation of present satisfaction as compared with later satisfaction" (*ibid.*, 484). In the second, he adopted the role of the capitalist-investor of money. "Those contesting the universal validity of time preference fail to explain why a man does not *always* invest a sum of 100 dollars available today, although these 100 dollars would increase to 104 dollars within a year's time (*ibid.*, 486, emphasis added). The fact that a "capitalist" sometimes chooses not to invest his money, even though he could earn market interest, demonstrates time preference.<sup>6</sup>

Before discussing originary interest, it is worth considering one condition under which a person might be indifferent to time (and, therefore, would not choose or act). This condition is complete satiation. To use Mises's terms (see below), a person would be indifferent if he lived in the land of Cockaigne.

### **Originary Interest**

Mises wrote that praxeological time preference is *manifest* in the following characteristic of the market economy: that present goods of a given kind have a higher price than the current resources that are needed to produce future goods of the same kind (*ibid.*, 524). He used the term *originary interest* to refer to this difference.

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<sup>6</sup>Both of these demonstrations must be read carefully to recognize that Mises is referring to praxeological time preference and not a stronger notion of positive time preference.

Originary interest is the ratio of the value assigned to want-satisfaction in the immediate future and the value assigned to want-satisfaction in remote periods of the future. It manifests itself in the market economy in the discount of future goods as against present goods. It is a ratio of commodity prices, not a price itself. In the imaginary construction of the evenly rotating economy the rate of originary interest is the same for all commodities. “Originary interest is not ‘the price paid for the services of capital.’” (526)...[It] is not a price determined on the market by the interplay of the demand for and the supply of capital or capital goods. Its height does not depend on the extent of this demand and supply. It is rather the rate of originary interest that determines both the demand for and the supply of capital and capital goods.

People do not save and accumulate capital because there is [originary] interest. [Originary] interest is neither the impetus to saving nor the reward or the compensation granted for abstaining from immediate consumption. It is the ratio in the mutual valuation of present goods as against future goods.

The loan market does not determine the rate of [originary] interest.” (*ibid.*: 526-7)...Originary interest is a category of human action. It is operative in any valuation of external things and can never disappear...We cannot even think of a world in which originary interest would not exist.(526-527)

Mises clearly does not mean for originary interest to refer to loan interest in the market economy. Otherwise, he would not write that it is not a price determined on the market. What then does he have in mind? In answering this question, we shall clear up one of the mysteries of *Human Action*, namely, why he would use the term “originary interest.”

What he almost certainly had in mind is *social time preference*. As used here, social time preference refers to a relationship between the valuation of current goods, taken in the abstract, and the valuation of future goods, also taken in the abstract, for each participant in the market economy. The concept of social time preference is akin to that of a *natural rate of interest*. However, as will be made clear during our discussion of the ERE, both the term “originary interest” and “social time preference” caution the user against assuming that a natural rate of interest is somehow identifiable. All three of these terms refer to the abstract praxeological idea, based on our intuitive and experiential knowledge of action, that actors have time preference, which must be accounted for by entrepreneurship. The use of these terms is fully consistent with Mises’s idea (1) that an economy containing a natural rate of interest is an imaginary construction

and (2) that it should never be confused with a real economy because it contains no entrepreneurship.<sup>7</sup> To understand these points fully, we must first appreciate the ERE, to which Mises ordinarily referred to when he used the term in relation to economic interaction.

If originary interest really means social time preference, why did Mises not use the latter term? A possible explanation is that he wanted to avoid connoting a preference aggregate on the grounds that one might erroneously think that such an aggregate actually exists in a market economy or that central planners could effectively act as a surrogate for markets in choosing according to the time preferences of the individuals in a society.<sup>8</sup> Before we can say more about this, it is necessary to introduce the only imaginary construction which Mises said would contain originary interest in its pure form, namely the ERE.

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<sup>7</sup>Michael Gootzeit (1994: 101) is thus correct to equate the originary interest rate to the natural interest rate. Indeed, as Gootzeit points out, Mises himself equates the two. However, his citation is from a 1928 work. This was long before *Human Action*, in which Mises revised his presentation by employing the methodological device of the evenly rotating economy and of using the term “originary interest” in reference to that construct.

<sup>8</sup>Whatever his reason, this author believes that his choice was regrettable. Just as no one seems to have comprehended the necessity for using the imaginary construction he labeled the evenly rotating economy, no one seems to have realized that originary interest and social time preference are equivalent.

## 2. THE EVENLY ROTATING ECONOMY

As mentioned earlier, Mises deduced that the market rates of interest have three components: (1) a praxeological time preference component, (2) an entrepreneurial component, and (3) a price premium component.<sup>9</sup> In producing a theory of direct exchange, in which money plays no significant role, Mises faced the problem of building an image of the market economy in which praxeological time preference and entrepreneurship provide the full explanation of market interest. To solve this problem, he had to make a transition *from* the a priori assumption that individuals have praxeological time preference *to* an image of a market economy in which there is a relationship between time preference and the market rate of interest. To make that transition Mises employed the ERE.

### **The Need for an Image of Market Interdependence**

Building the image of the ERE is not only a special means of elucidating interest. It is also a step that one *must* take in order to comprehend the complex economic interaction of the pure market economy. The ultimate goal is an image of the pure market economy – that is, an image of interaction under the assumption that property rights are fully defined and enforced in all goods, that money is used as a medium in the satisfaction of all wants, that individuals are specialized, and (for simplicity) that there is no fraud and no goods with public goods characteristics. Under

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<sup>9</sup>See parts 1-3 of Mises 1966: chapter 20.

these conditions, individuals have incentives to supply goods and services that others want in exchange for money, which they can use to purchase the goods and services that they themselves want. Such an image of interaction is necessary in order to build images in which these assumptions are relaxed in various ways and which we can employ to help identify the effects of market intervention.

Even the interaction that occurs under the restrictive conditions of the pure market economy is extremely complex. To deal with this complexity, we must begin with the imaginary and even contradictory construct of the evenly rotating economy, which contains market interdependence without action.

### **From the Static System to the Evenly Rotating Economy**

A major contribution of the writers following the subjectivist revolution of Carl Menger was to identify functions and the roles that individuals play in the performance of economic functions. Specifically, writers like Bohm Bawerk and J. B. Clark showed that individuals act in the roles of consumer-savers, suppliers of the resources, and entrepreneurs. To elucidate the entrepreneur role, Clark began by conceiving of an image of a static, robot economy in which entrepreneurship is absent. Then he contrasted this image with his conception of how individuals would act under the conditions of the “dynamic” economy. This enabled him to identify the "function" of the entrepreneur. Further developments in the study of the entrepreneur function led economists to identify it with the appraisal of the resources, the direction of the resources to

their various employments, and uncertainty-bearing.<sup>10</sup> This combination provided the grand framework that was desired. It remained only for someone like Mises to supply the methodological foundation of praxeology.

Clark (1899) called his robot economy the static society, Knight (1921) called it perfect competition, Schumpeter (1934) called it the circular flow of economic life, and Mises (1966) called it the evenly rotating economy. In my view, Mises provided the least ambiguous and most modern description of it for economists. It is worth quoting at length. He said that the ERE is

a fictitious system in which the market prices of all goods and services coincide with the final prices. There are in its frame no price changes whatever; there is perfect price stability. The same market transactions are repeated again and again. The goods of the higher orders pass in the same quantities through the same stages of processing until ultimately the produced consumers' goods come into the hands of the consumers and are consumed. No changes in the market data occur. Today does not differ from yesterday and tomorrow will not differ from today. The system is in perpetual flux, but it remains always at the same spot. It revolves evenly around a fixed center.

In reality there is never such a thing as an evenly rotating economy. However, in order to analyze the problems of change in the data and of unevenly and irregularly varying movement, we must confront them with a fictitious state in which both are hypothetically eliminated...This so called static method is precisely the proper mental tool for the examination of change. There is no means of studying the complex phenomena of action other than first to abstract from change altogether, then to introduce an isolated factor provoking change, and ultimately to analyze its effects under the assumption that other things remain equal...The static method, the employment of the imaginary construction of the evenly rotating economy, is the only adequate method of analyzing the changes concerned without regard to whether they are great or small, sudden or slow...These insoluble contradictions [that change is eliminated in the ERE, that the ERE is not peopled with living men, that real action does not correspond to the ERE], however, do not affect the service which this imaginary construction renders for the only problems for whose treatment it is both appropriate and indispensable: the problem of the relation between the prices of products and those of the factors required for their production, and the implied problems of entrepreneurship and of profit and loss. In order to grasp the function of entrepreneurship and the meaning of profit and loss, we construct a system from which they are absent. This image is merely a tool for our thinking. It is not a description of a possible and realizable state of affairs. It is even out of question to carry the imaginary construction

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<sup>10</sup>I refer specifically to Davenport (1913), Knight (1921), and Mises himself; although there were many other economists who more or less followed the lead of these writers or, in a similar way, filled in the blanks left by Menger and Clark. Mises refers to Bohm Bawerk and Clark in Mises 1966: 354n. Kirzner describes the procedure well in his 1973 book, although he seems to use it for a different purpose than the other writers. See Kirzner 1973: 41-3; 76. Mises's specific contribution is discussed in Gunning 1997 and 1998a. Davenport's contribution is discussed in Gunning 1998b. Knight's is discussed in Gunning 1993.

of an evenly rotating system to its ultimate logical consequences. For it is impossible to eliminate the entrepreneur from the picture of the market economy. The various complementary factors of production cannot come together spontaneously...Such a rigid system is not peopled with living men making choices liable to error; it is a world of soulless unthinking automatons; it is not a human society, it is an ant hill.(247-8)

A point to be emphasized in this quotation is that the ERE is necessary to “grasp the function of entrepreneurship and the meaning of profit and loss.” The function of entrepreneurship refers to “acting man exclusively seen from the aspect of the uncertainty inherent in every action.”(*ibid.*: 253) As Mises viewed it, the ERE is a counterfactual that enables one to elucidate uncertainty and all of its implications. In short, Mises dealt with complexity by means of a combination of the ERE to comprehend market interdependence, and entrepreneurship to represent action under the conditions of the market economy.

### **Interest in the Evenly Rotating Economy**

The very idea of a static system implies the absence of time. However, in order to separate the time preference component of interest from the entrepreneurial component, it is necessary to conceive of a static system that contains a rate of interest that “reflects” time preference. Just as the static system contains a relative price of apples and oranges, which helps us separate the outcome of entrepreneurship from entrepreneurship itself; so also does it contain a price of future goods relative to the sum of the prices of the resources necessary to produce them plus interest.

This idea of the static system with interest is not an arbitrary concoction. It is built with the express intention of separating the time preference component of interest from the entrepreneurial

component. Thus, Mises conceives of an ERE with interest. He writes that “in the imaginary construction of the evenly rotating economy...the mere passing of time matures originary interest” (*ibid.*: 534). However, since there is no real time in the ERE, his reference is not to subjective time or even to clock time. It is to the imaginary repetitive, instantaneous production and consumption of the ERE.<sup>11</sup>

Why do we need originary interest (i.e., social time preference) in the ERE? The answer is that we need it for the same reason that we need rates of exchange (i.e., relative prices of goods) in the ERE. Consider an analogy. Imagine a group of isolated actors each of whom produces two goods: apples and oranges. We can describe each actor in terms of his distinct personal tradeoff between the two goods. Assuming that actors have different preferences or different specialized abilities to produce apples and oranges, we can imagine a basis for multi-person trade. We can go on and imagine that the trade somehow takes place without any need for entrepreneurship. Under these assumptions, we could deduce what we might call a “social tradeoff,” or rate of exchange, between the two goods.

In this exercise, we proceeded from the assumption of a preference for the two goods by each separate market participant to a hypothetical “social preference” for the goods in an imaginary economy without entrepreneurship. Let us now embellish our image to include specialization in production. Assume that some individuals, let us call them consumers, only possess *preferences* for apples and oranges. They have no *knowledge* of how to produce the goods.

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<sup>11</sup> “[T]he imaginary construction of the *evenly rotating economy*...is characterized by the elimination of change in the date and of the time element” (*ibid.*: 246-247).

Such knowledge would be possessed by entrepreneurship if it were present. However, we want to continue our assumption that it is not present. So we shall merely *stipulate* that such knowledge is used in production by robot producers and resource suppliers.

In making these stipulations, we have in the backs of our minds the fact that, in a market economy, the preferences of each consumer, as estimated by entrepreneurship, help to determine the actual exchange rate of apples for oranges. We know that, under the conditions of the market economy, adjustments of the market exchange rate to the social apple-orange preference would have to take place through the distinctly human action of profit-seekers – i.e., entrepreneurship. Of course, entrepreneurship would also take account of technology and the demands for other goods which considered together, would enable it to determine production costs. But since our aims are to focus on the social preference and to represent interdependence, we build an image that does not contain entrepreneurship. This image corresponds Mises's ERE.

The next step is to add interest. To do this we assume that each individual possesses time preference and that the individuals either differ in their time preference or they possess different specialized skills in producing goods. We imagine that trade involving a time dimension takes place without entrepreneurship. We build an image in which there are repetitions in trade but no real time. And we stipulate a rate of interest which reflects "social time preference." We know that in the market economy loan rates of interest would have to be established by entrepreneurship. But our aim here is to build a simple image that contains social time preference.

We can now address the issue of why Mises used the term “originary interest” to refer to what earlier economists had called the natural rate of interest. The answer is almost certainly that he recognized the danger of treating a model of an economy containing a natural rate of interest as a realistic representation of the market economy. By the time he wrote *Human Action*, many economists had turned to representing the market economy by means of mathematical equations that assumed equilibrium. These mathematical economists made the error of mistaking the equilibrium construct for a real market economy. This was a mistake, in Mises’s view, because it disregarded the original purposes of employing the imaginary construction of equilibrium, namely, to represent market interdependence in the simplest way and to elucidate entrepreneurship by means of the counterfactual.<sup>12</sup> We suggest that Mises introduced the term “originary interest” to help reinforce his warning against the use of an equilibrium model to represent a real market economy.

One of our deeper aims is to conceive of the entrepreneurship that would be necessary to lead to the emergence of interest in the pure market economy. In thinking of the ERE interest rate, we merely assume that it equals social time preference. This is a counterfactual. When we turn our minds to interest in the market economy, we assign to entrepreneurship the task of bringing loan

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<sup>12</sup>As Mises pointed out, “(w)hat the logical economist sets forth in words when defining the imaginary constructions of the final state of rest and the evenly rotating economy and what the mathematical economist himself must describe in words before he embarks upon his mathematical work, is translated into algebraic symbols. A superficial analogy is spun out too long, that is all” (Mises 1966: 355).

market interest into line with the imaginary originary interest of the ERE. We now proceed to show how Mises achieved this.<sup>13</sup>

### 3. MISES ON INTEREST AND ENTREPRENEURSHIP IN THE PURE MARKET ECONOMY

Mises discussed entrepreneurship in relation to market interest in two sections of *Human Action* (1966). The first is entitled "Originary Interest in the Changing Economy." In this section, he points out that "[ERE] interest can...in the changing economy never appear in a pure unalloyed form." It is only in the imaginary construction of the ERE that such a pure interest exists.

In the changing economy interest stipulated in loan contracts is always a gross magnitude out of which the pure rate of originary interest must be computed by a particular process of computation and analytical repartition (*ibid.*: 535-6).

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<sup>13</sup>It would not be correct to say that Mises emphasized this procedure. Indeed, in his discussion of originary interest in the ERE, he seems to have become preoccupied with the task of showing that Schumpeter was incorrect to assume that the static equilibrium would not contain interest. As a result, he associated originary interest in the ERE with a return to the owners of capital goods. (*ibid.*: 530-2) The usefulness of such an exercise is not evident to this writer. It would be more to the point to say that because we need an image of the ERE to help us understand how praxeological time preference is manifest in the market economy, we want that image to contain some semblance of it. An ERE that contains interest enables us to provide a rationale for the robot consumers of the ERE to spread their consumption over the imaginary repetitions of production and consumption.

Since praxeological time preference must be present in the changing market economy, the statement is reasonable enough. However, the terms "pure" and "originary" can be misleading.<sup>14</sup> It would be better to say that if we could separate out the entrepreneurial component of market interest, we would have interest that only reflected the social manifestation of praxeological time preference. Such a statement might read as follows:

In the changing economy interest stipulated in loan contracts is always a gross magnitude out of which the social manifestation of praxeological time preference could be identified if it was possible to fully separate out the entrepreneurial component of market interest.

To show his affiliation with subjective value theorists who employed the static system concept in order to elucidate entrepreneurship, Mises points out that what their predecessors, the classical economists,<sup>15</sup> called profit consists of three conceptually distinct entities: managerial or entrepreneurial wages (remuneration for the entrepreneur's own labor), entrepreneurial profit, and interest. Using economic theory to separate entrepreneurial wages from entrepreneurial profit presented little difficulty to the subjective value theorists. However, precipitating the interest that corresponds to praxeological time preference in its social manifestation, did present a problem (*ibid.*: 535).

...It was only the elaboration of the imaginary construction of the evenly rotating economy that made it possible to distinguish precisely between originary interest and entrepreneurial profit and loss (*ibid.*: 536).

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<sup>14</sup>Nevertheless, the term is consistent with Mises's definition of originary interest, as quoted above; since he says that it is a ratio which, in the market economy, is manifest in market interest.

<sup>15</sup>He refers specifically to R. Whately and E. Cannan.

The second section in which he discussed interest is entitled "The Entrepreneurial Component of the Gross Rate of Interest." Mises wrote about the specific actions of entrepreneurship in relation to interest. He focused on the transaction through which originary interest is received – making a loan. In this transaction, the "moneylender is always an entrepreneur" because he "is always faced with the possibility that he may lose a part of the whole of the principal lent...Debtors, guarantors, and warrantors may become insolvent; collateral and mortgages may become worthless."

...Gross interest can be reaped only by creditors who have been successful in their lending. If they earn any net interest at all, it is included in a yield which contains more than merely net interest. Net interest is a magnitude which only analytical thinking [i.e., the thinking of the enlightened post-classical economist] can extract from the gross proceeds of the creditor.

The entrepreneurial component included in the creditor's gross proceeds is determined by all those factors which are operative in every entrepreneurial venture (*ibid.*: 539-40).

Thus, interest contains an entrepreneurial component partly because every debtor, guarantor and warrantor must bear the uncertainty that the loan will not be repaid on time. We can identify the entrepreneurial component of interest only by making a contrast between the ERE and the kinds of actions that we know, by intuition and experience, that actors would take under the conditions of the pure market economy. By the same token, it is only by means of such a contrast that we can clearly distinguish entrepreneurial profit from interest, as Mises asserts in the above-quoted passage from p. 536 of *Human Action*.

Note Mises uses the term “*net* interest” here and not originary interest. As before, it would be better if he simply referred to the praxeological time preference component of market interest.

#### 4. SUMMARY OF THE ERE'S USE TO ELUCIDATE MARKET INTEREST

Before proceeding, it seems wise to provide a brief summary of the role of the ERE in elucidating market interest. In order to comprehend how the fundamental praxeological category of time preference is manifest in the market economy, we begin by introducing the image of the ERE. We must take this step in any event in order to elucidate entrepreneurship. But it also helps us build *a conceptual bridge* between praxeological time preference and loan interest. We build the image of the ERE such that the repetitive behavior is analogous to the loan contract periods of the market economy. And we include a rate of interest that represents praxeological time preference in its social manifestation.

The ERE interest rate is framed in such a way that it appears to correspond to loan rates of interest in the pure market economy. However, loan rates differ from the rate in the ERE. All of the various loan rates of interest in the market economy include an entrepreneurial component, since the lender must bear uncertainty. In addition, no lender lends all of his money repeatedly for an indefinite time. Loans in the market economy are made for various periods of time and the contract periods of some loans overlap the contract periods of other loans (*ibid.*: 536).

The ERE is an imaginary construction of an economy that contains interest without entrepreneurship. In the market economy these exist together. Thus, Mises wrote that the rate of interest in the market economy has the two components of ERE: originary interest (= social time preference) and entrepreneurial profit. However, it is obvious that the market economy cannot

possess ERE interest. What he meant is that the non-entrepreneurial component of interest – the praxeological time preference component in its social manifestation – is conceivable only by means of analytical thinking that requires the conceptual bridge of the ERE. The proper way to express this is to say that the two components of interest in the imaginary money-neutral market economy are (1) entrepreneurial profit and (2) the return on saving that entrepreneurship makes available to individuals in their role as consumer-savers. Because entrepreneurship must account for the respective time preferences of these individuals we can call this the praxeological time preference component of market interest.

## **5. WHY THE MARKET ECONOMY CONTAINS INTEREST**

Let us use our discussion to answer the historically significant question of why a market economy contains interest on saving. We adopt two different approaches. In the first we show why the rate of social time preference – that is, the praxeological time preference component of interest – must be positive. In the second, we build an analogy between the present-future tradeoff implicit in the action of an isolated actor and the present-future tradeoff as it must take place under the conditions of the market economy containing the roles of the consumer-saver, producer, resource-suppliers, and distinctly human entrepreneurship. We consider each approach in turn.

**Why Social Time Preference Must be Positive**

Let us return to the analogy of the social preference for apples with respect to oranges. It is obvious that the market rate of exchange between apples and oranges would always be positive. For the rate to be negative, we would have to assume that entrepreneurship believes that either the apples or oranges are not goods, but “bads.” Thus, the deduction that the rate of exchange between apples and oranges must be positive follows from the definition of the apple and orange as goods. When we build the image of a static system, or ERE, we posit a rate of exchange between every pair of goods because this supposition corresponds to the assumption that the two things are goods.

This market rate of exchange between apples and oranges – the rate that we imagine to exist without entrepreneurship and regardless of production conditions – is analogous to ordinary interest. It follows that so long as we assume that individuals want goods both in the near and distant future, the rate of interest must be a positive.

How about interest in the market economy? Must it also be positive. Clearly it must. Otherwise, no one would lend. This does not mean, of course, that entrepreneurship must always *have been* compensated for its activities in causing loans. The entrepreneurial component may have been negative if the entrepreneurs had made mistakes. Moreover, the price premium may have been negative if entrepreneurs failed to anticipate changes in the purchasing power of money due to unexpected changes in money. Of course, entrepreneurship must *expect* to be compensated for its actions. Thus, the rate of interest in the market economy that entrepreneurs anticipate must always be positive.

**The Tradeoff for the Isolated Actor and the Market Interest Rate**

As a second exercise, contrast the market economy with the isolated actor. An isolated actor would save by (a) setting aside goods and/or (b) not using all of his time and energy to produce in ways that bring him the most immediate satisfaction (without regard to the future satisfaction that is sacrificed). For example, if he had a choice to use his energy to produce either one apple for tomorrow or a million perishable oranges for today, he would save by producing the apple. The reason why he saves is that he values the future satisfaction higher than *some part* of the most immediate satisfaction he can receive. We can represent his decision to save by saying that the only reason a person saves is that he expects to "earn a premium on his saving." The premium is his estimate of the additional satisfaction, over what he could have today if he did not save. We could say that this premium corresponds to a "praxeological time preference rate."

Now consider saving and interest in a market economy. An actor in the market economy saves by using money. But what assures that saving money will be rewarded by the expected greater satisfaction of future goods? Clearly, someone must believe that it will be profitable to make those goods available at a future time at prices that correspond to the saver's expectations. Someone must either produce future goods or conserve present durable consumers' goods for the future. In the market, beliefs of this sort are in the province of entrepreneurship. They fall under the category of appraisal. Without appraisal, the means of satisfying consumer wants would not be known and the assumed wants could not be satisfied. If entrepreneurs did not recognize opportunities to gain from producing future goods (or conserving goods, if production

is somehow impossible), saving would make no sense. When the future arrived, there would be no goods available to buy. Under the assumptions of economics, saving is carried out for the sole purpose of consuming future goods. In the market economy under normal circumstances, consumer saving must be accompanied by entrepreneurship, which is the agency that either causes the future goods to be produced or that reserves the goods for the consumers who demand them.<sup>16</sup> By the same token, interest, as the return on saving, must be accompanied by the expectation of profit.

Because entrepreneurship cannot function without money, it sets out to borrow the money in loan markets. It offers interest on consumers' savings. This explains why there is loan interest. Without it, there could be no entrepreneurship. And without entrepreneurship, consumers would be in error to expect that future goods would be available when they sought to spend their saved money. Their market saving would be tantamount to the isolated actor's putting goods aside, knowing that the goods would disappear. So long as we assume that individuals do not systematically make errors in their decisions to save, the rate of interest in the market economy must be positive.

Entrepreneurship's recognition of praxeological time preference it leads entrepreneurship to create a demand for loan money to finance the production of goods for the future. It thereby provides an incentive for consumer-savers to save in the form of money. When entrepreneurship borrows this money, it causes a *"positive" rate of interest*. This rate of interest corresponds to the

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<sup>16</sup>"The direction of all economic affairs is in the market society a task of entrepreneurs. Theirs is the control of production" (*ibid.*: 269).

praxeological time preference rate of the isolated actor. Interest would exist in the pure exchange economy because different individuals have different time preference. But it also exists in a production economy. In both cases, a precondition for its existence is praxeological time preference.

## 6. THE TRADE CYCLE

In this section, we explore how Mises applied the concept of praxeological time preference to analyze the trade cycle. Doing this will help to confirm that the interpretation of the theory provided in this paper is correct. It is important to realize that his presentation of the theory in *Human Action* differs from his early presentation in *The Theory of Money and Credit*.<sup>17</sup> In presenting the latter, he had to first develop the framework that enabled him to separate the influences of praxeological time preference and entrepreneurship on interest. The theory he presented in *Human Action* was based solely on the assumption that in making its decisions, entrepreneurship takes account of the consumer role's time preference. An unexpected change in the quantity of money that enters through the loan market triggers a set of false signals about praxeological time preference. As a result, consumers are less well served during this time than they otherwise would

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<sup>17</sup>In reflecting on his disposition at the time he wrote *Money and Credit*, Mises (1978: 56) noted that a more complete work would have required beginning with a theory of direct exchange. This is precisely the kind of foundation he provided in *Human Action*. It was in the process of providing such a theory that he introduced the evenly rotating economy.

have been. There is a misdirection of resources in the sense that the unexpected money induces entrepreneurial error that would otherwise not exist.

Speaking in the broadest terms, Mises's version of the trade cycle theory is as follows. Bankers or a central bank unexpectedly introduce additional currency into loan markets causing the market interest rates to fall. Since the market interest rates, which correspond to the price ratios of present to future goods, are signals of consumers' time preference; individuals acting as entrepreneurs erroneously regard those falling rates as a signal of a changing praxeological time preference in favor of more distant future goods. So they withdraw resources of production from near-future goods' production and allocate more resources to distant-future goods, a decision that they later regret.

That an unexpected increase in the quantity of money induces entrepreneurial error is absolutely certain, given the assumptions. However, the cycle of rising prices and employment, followed by falling prices and unemployment, is merely one possible set of outward manifestations. Under certain conditions, entrepreneurship in general may anticipate the whole trade cycle phenomenon. In this case, it may borrow the money for the purpose of speculation.<sup>18</sup> Alternatively, the new, unexpected money may be injected in ways other than through loan markets (*ibid.*: 555-6).

Given this general overview, let us see how Mises's notions of the components of the gross market rates of interest – namely, social time preference (originary interest) and the entrepreneurial

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<sup>18</sup>This is a logical extension of Mises's discussion of a situation in which entrepreneurship views the increase in money as “pump-priming” (*ibid.*: 555).

component – play a role in his analysis. First, he introduces the credit expansion phenomenon by referring specifically to the social time preference rate, i.e., his rate of originary interest. He points out that the unexpected increase in money shifts the market interest rates away from the corresponding social time preference rate. He writes:

If the inflow of money and money-substitutes into the market...affects the loan market first, it temporarily disarranges the congruity between the gross market rates of interest and the rate of originary interest...The market rate deviates from the height determined by that of the originary rate of interest, and forces come into operation which tend to adjust it anew to the ratio which corresponds to that of originary interest (*ibid.*: 550-1).

Next he writes that the changes themselves may affect social time preference:

It may happen that in the period of time which this adjustment requires, the height of originary interest varies, and this change can also be caused by the inflationary or deflationary process which brought about the deviation (*ibid.*: 551).

Assuming that the credit expansion is caused by an “increase in fiduciary media offered on the loan market” (*ibid.*: 552), Mises goes on to show how entrepreneurial decisions are affected. Because the gross market rates enter into entrepreneurial calculations and because they are lowered by the increase in fiduciary media, entrepreneurs embark upon the execution of projects that appear profitable due to the low rates but which would have been regarded as unrealizable if the interest rate had not been manipulated by credit expansion (*ibid.*: 553).

Assuming that the credit expansion continues, the entrepreneurs are spurred on by a wave of optimism that may reduce the social time preference rate. Consumers increase their demands for present goods on the basis of the belief that the future will bring better conditions than the past. During this period, gross market rates may be rising. “Nonetheless, they lag catallactically behind the height at which they would cover originary interest plus [the] entrepreneurial component and

price premium” (*ibid.*: 558). But this optimism is short-lived. Time preference changes as the optimism turns to pessimism. Ultimately, a “tendency toward a rise in the rate of originary interest is substituted for the tendency toward the opposite which may have come into operation at the earlier stages of the expansion” (*ibid.*).

As soon as the afflux of additional fiduciary media comes to an end, the airy castle of the boom collapses. The entrepreneurs must restrict their activities because they lack the funds for their continuation on the exaggerated scale...As on the one hand many firms badly need money in order to avoid bankruptcy, and on the other hand no firm any longer enjoys confidence, the entrepreneurial component in the gross rate of interest jumps to an excessive height (*ibid.*: 562).

We see then that the concept of the social time preference (originary interest) and the entrepreneurial component of interest play an indispensable role in Mises’s theory of the trade cycle. And neither of these concepts can be defined distinctly without the use of the evenly rotating economy. It seems to follow that to try to describe the cycle without using these concepts would be a misrepresentation of Mises’s later elucidation of the trade cycle.

## 7. CONCLUSION

This paper has shown how Mises distinguished two components of the market rate of interest: the social time preference (originary interest) component and the entrepreneurial component. Mises's image of the evenly rotating economy played an indispensable role in the analytical process that enabled him to accomplish this task. On the one hand, it enabled him to

isolate entrepreneurship by means of a contrast with the robots of the ERE. On the other hand, it enabled him to identify a semblance of praxeological time preference in the ERE interest rate.

The paper also showed that these components were used by Mises in the deeper version of the Austrian trade cycle theory that he presented in *Human Action*. The paper also vindicated Mises from Lewin's charge that the ERE is unnecessary and misleading. Not only did Mises successfully use the ERE to separate the time preference and uncertainty components of interest, such a separation is absolutely necessary if one is to comprehend *uncertainty about time preference*. And one must comprehend this if one is to correctly understand the trade cycle theory.

## Appendix

### Lewin on Interest and the Evenly Rotating Economy

Lewin's paper in a professional history of economic thought journal is critical of Mises's concepts of the evenly rotating economy and time preference. His thesis is best expressed in his conclusion. In Lewin's view "*time preference is strongly intuitively connected to the presence and type of uncertainty in the world*" (Lewin 1997: 156). He presents an example to support the view that market interest arises from the uncertainty of the future. Recognizing that, in reality, time preference and uncertainty are always found together, he eschews constructs like the ERE that "banish the essential nature of time" on the grounds that they "seem to hinder rather than help in understanding time preference" (*ibid.*: 157). More pointedly, he asserts that Mises's effort to use the ERE to deal abstractly with the complex problem of explaining market interest was not meaningful or relevant.<sup>19</sup>

In the author's view, although Lewin is absolutely correct that in the market economy time preference and uncertainty both influence interest rates, he is dead wrong in two other ways. First, he is wrong in his judgment that we do not need a methodology that will enable us to clearly separate the two influences. Without such a methodology, we would be unable to discuss *uncertainty about time preference*. And if we were unable to understand uncertainty about time

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<sup>19</sup>"We are, however, in the end, left wondering whether what it achieves by abstraction is at the crucial expense of meaning and relevance" (*ibid.*: 142).

preference, we would not be able to understand the deeper Austrian theory of the trade cycle that Mises presented in *Human Action*. Second, he is wrong about the role of the ERE in helping us to make this separation. Let us investigate further his criticism of the ERE.

While being careful to say that he does not wish to delve too deeply into this issue, he nevertheless concludes that the ERE is not helpful.<sup>(155)</sup> He writes that

...if the ERE does not have real time, how can we have time preference? What can it possibly mean? Without change there can be no consciousness of time. I suggest, therefore, that anything that we think that we can learn about time preference from contemplating the ERE is actually the result of a kind of subliminal modification of the assumptions to allow for real time and real choice to enter unconsciously.<sup>(Lewin 1997: 156)</sup>

In other words, he suggests that Rothbard and Mises, who used the ERE to deal with time preference and interest, have unknowingly erred in their reasoning.<sup>20</sup>

Let us begin our assessment by examining what Mises writes. We can begin with a statement quoted by Lewin:

Under the conditions of the market economy the rate of ordinary interest is, provided the assumptions involved in the imaginary construction of the evenly rotating economy are present, equal to the ratio of a definite amount of money available today and an amount available at a later date which is considered as its equivalent.<sup>(Mises 1966: 532; Lewin 1997: 154)</sup>

Now this statement appears at first to be confused. Is Mises writing about the conditions of the market economy or about the conditions of the ERE? Does or can the market economy contain an ERE? In fact with the exception of some ambiguity regarding a rate and a ratio, the statement is

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<sup>20</sup>Lewin also notes with approval several writers in the Austrian tradition who have regarded time preference as an empirical phenomenon rather than a logical one.<sup>(*ibid.*)</sup> These writers are Frank Fetter, Israel Kirzner, and Ludwig Lachmann.

quite clear and meaningful to one who is familiar with the task Mises was trying to accomplish and with the method of elucidation that Mises was using.

Originary interest in the statement refers to ERE interest, which acts as a bridge between praxeological time preference and loan interest in the market economy. Praxeological time preference is based on the subjective perception of sooner and later, which is present in every action by definition. Interest in the ERE refers to social time preference in an imaginary situation where no entrepreneurship is present to discover it and to act on it. The ERE enables one to separate the social time preference, or originary interest, component of the gross market rate of interest from the entrepreneurial component.

Lewin asserts that we are deceiving ourselves if we believe that we can learn anything about real time and time preference by studying the ERE. This statement is, of course, correct. However, our object in using the ERE is not to learn about real time or time preference but to create a bridge between praxeological time preference and its market manifestations of loan interest. Our aim is not to learn but to find a means of expressing what we already know from intuition, experience, and reason.

In Mises's view, the necessity of the ERE derives from its usefulness in elucidating (1) the relationship among the prices of goods and the resources and (2) the corresponding concepts of entrepreneurship and profit and loss (*ibid.*: 248). In addition, he says that the ERE enables one to distinguish entrepreneurial profit from interest (*ibid.*: 536, as quoted earlier). Surely being able to do this is an important step in using one's words meaningfully.

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## **Time Preference and Entrepreneurship: Ludwig von Mises on the Components of Market Interest**

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